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COTTON

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COTTON

Vol. 95 January, 1931 No. 3

How the CALLAWAY MILLS Develop New Uses *and* Products

By O. C. Holleran

From duck and other unfinished products—to chenille rugs and laundry textiles. This, and other things, has been accomplished, successfully, by the Callaway group of mills in Georgia. They saw a need for change, studied the change and made it. Here is only a part of the absorbing story of what has taken place at LaGrange during the past few years; with a description of the characteristically thorough way in which it was done—and it should give every textile manufacturer plenty of food for thought.

CASON J. CALLAWAY said in a recent article that much of the trouble with the cotton textile industry of the United States lies in the fact that primarily we spend too much time on manufacturing problems and too little in marketing, with the result that now when conditions are bad and the industry is in a depressed state, we are wasting a great deal of energy in endeavoring to take customers away from each other rather than in locating new markets for our products and new uses for cotton.

Perhaps no organization has been more interested than the Callaway Mills in finding and creating new uses for cotton products. Yet, six years ago Callaway Mills were thoroughly typical of a great section of the southern textile industry. No finished goods were turned out. Marketing was done in the regular way through the New York selling agents. When Cason Callaway became active head of the organization, he realized that future expansion must be along new lines and from the beginning of his administration he directed his efforts toward finding or creating new and enlarged uses for cotton products. As a result of his efforts several additional mills were organized to manufacture and market finished merchandise. The success of this activity is well known. While these mills are young in years, they have achieved national distribution and financial success. There has been no guess work, however, in their progress.

Showing a Valway cotton chenille rug, as a part of a library fireside ensemble.

Valway Rug Mills have grown in five years to be the largest cotton chenille rug plant in the world; largely because of the fact that the research and experimental departments completely analyzed every existing type of cotton rugs, then went a step further and made comprehensive studies of all conceivable uses of cotton rugs before a single step in production was taken. The result of this work showed that there is a very definite potential demand for fine cotton chenille rugs, designed and produced for use in bedrooms, sunrooms, nurseries and other places in the home besides the bathroom, to which they had been relegated for years.

Oakleaf Mills, another of the Callaway units, has created an entirely new market for manufactured fabrics in the machinery wiping towel field. Here, also, a long period of careful experiment, involving the trial and rejection of numerous weaves, weights and sizes, has preceded the adoption of the present efficient and economical lines of cloths.

Valley Waste Mills, another division of the Callaway Mills, has established new grading methods for cotton mill

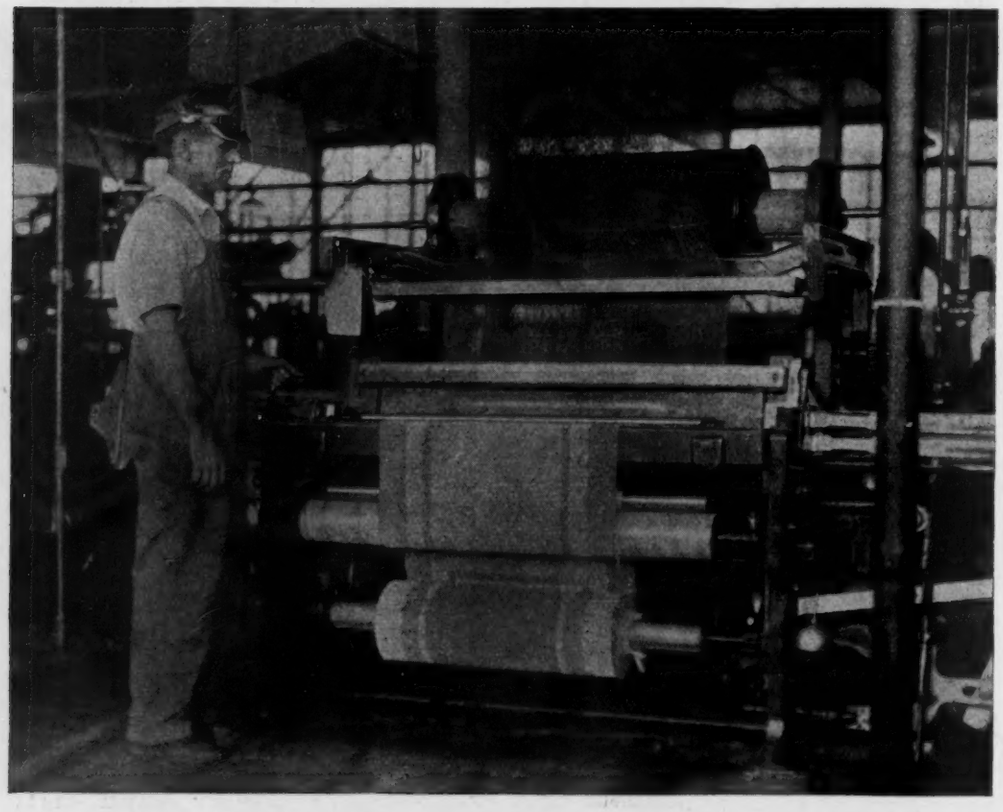
waste, and today are producing semi-manufactured products from this material to sell at a profit in standards and quantities which a few years ago would have been considered a pipe dream.

Much of this expansion into new fields has been due to the ability of the organization to collect, analyze and absorb market facts. The facts having been gained, it is quickly seen whether a market exists in the field under consideration for any particular sort of cotton goods. Sometimes a market study reveals the possibility of an expansion of cotton goods consumption in a particular field, but the opening of this potential market is regarded as impracticable for a large organization, perhaps because of the need of specialization, or on account of the limited size of the field. A good example is the possibility at present of marketing profitably dressing gowns, beach robes, infant's robes, and similar items made of fine featherweight chenilles. For some mill prepared to make the quick changes necessitated by style, and to produce in rather limited quantity, this should be an attractive market.

On the other hand, a mill which proposes to expand into new markets must be prepared to pay the price of preparatory work and experiment. An exhaustive study of a nation-wide demand, whether it be an active or a potential demand, may take months of work merely to get the facts, and its greatest value in the end may lie in the proof that the market is not suitable for the exploitation of the mill making the survey. The cost of such work is, of course, considerable. Likewise, the research and experimental phases take both time and money. For example, Oakleaf Mills spent much money and more than two years of concentrated endeavor, before its manufacturing and marketing organizations had reached a point which could be called practical. Valway Rug Mills spent a tidy sum in market investigations, and in fabric research and experimentation, before offering its original line to the field.

It is easy to see how this can occur. More than one hundred different process dyeing combinations alone were worked out and tried before there was discovered a dyeing method which was really fade-proof. At the same time, in considering going into new markets with any merchandise, the market itself must be studied—where it is, who it is, why a particular cotton fabric is profitable to the group who are expected to buy it. After such questions are answered to the satisfaction of the manufacturing organization, through the production of a fabric which will do the job in mind, the real work begins; for in many cases the market itself does not know that it should or, in fact, could use cotton for the purpose indicated, and it must be educated up to this use, which is an arduous, if interesting, advertising and selling department job.

This educational process is one in which the selling agency of the ordinary kind is seldom efficient. This is not noted in depreciation of the sales agency, any more than it would be in case of a manufacturer's sales force under similar conditions in any other industry. The sales agency has its own selling field, in which it is a specialist, and when asked to go into new fields to create new business, it is naturally faced with the necessity of finding men who know those fields well enough to do the new selling job. In addition, the agency is many times forced to change its normal procedure as to terms, deliveries and methods, in order to meet the pecularities of the new market. These things all mean extra costs at the beginning, and few selling agents' commissions stand the strain, especially



Weaving color-fast cotton chenille rugs at LaGrange.

when the advertising cost is added.

Ordinarily the sales agent would find it impractical to take the responsibility for the market research work. This is due simply to the fact that the result of most market surveys reveals conditions which call for fabric research and technical experimental work in developing merchandise to meet the market requirements. The agent cannot do this, in such a way that the market study is closely tied to the manufacturer's activity, so usually such time will be wasted before the market study results are put into practice by the manufacturer and much of the potential value of the new field will have been lost.

Another adaptation of chenille rugs.

There is no particular secret about the methods utilized in determining new markets. There are a number of regularly organized agencies in the country who specialize in market surveys of various sorts. Where the mill has its own sales and advertising organization the surveys can usually be conducted by these departments at considerably less expense than through hiring an outside agency. Furthermore surveys conducted by the organization itself are likely to be more valuable than those conducted by outsiders simply because of the greater understanding of the manufacturing and marketing problems from the mill's point of view. Of course the organization of sales and advertising activities in a mill's organization affords individual problems in almost every case. Their value and their limitations will be determined solely by the man at the head of the department and the policy of the organization. In no case, however, should a mill which proposes to go into this type of activity have any but the best brains they can find at the head of the new departments. Anything less is false economy.

The problem of the changing market is another which every alert manufacturer will watch closely. No market in our day is stable. Better methods, new practices, changes in consumer living habits, all are constantly upsetting market equilibrium. The introduction of aluminum kitchenware reduced the demand for gray iron by a huge tonnage. In one decade the immense harness and farm wagon business has been practically wiped out.

The simplest style change means enormous fluctuations in an entire industry. In cotton, for instance, a change that would cause American women each to use 10 additional pounds of cotton fabrics for dresses, sheets, drapes, rugs, or any other purpose, would instantly create a need for another million bales of cotton.

This constant fluctuation in modern demand puts upon the manufacturer the burden of not only finding a market, but of gearing his production and sales to take prompt advantage of the facts he discovers, for on his speed in meeting these changes largely depends the profits he will gain.

Recent developments have shown quite positively that despite the 10,000 listed uses of cotton, the field is hardly touched. There are scores of markets today in which cotton could be introduced profitably by mills set up to make the merchandise reveal the needs of these particular consumers. The opening of these new markets would not unseat a single present item, but the new products would be used in addition to whatever material is now occupying the place.

An outstanding example of how a new market may be opened without displacing other merchandise is afforded by Valway Rug Mills. Most people who have nurseries cover the floor of the nursery with linoleum, because of the ease with which it may be kept clean. The use of Valway rugs does not lessen the use of linoleum. This rug with its absolute cleanliness, its deep pile, its luxurious softness, is just the thing needed to put over the linoleum for the child to play on. Likewise, in other rooms in the home where either hardwood or linoleum floors, without rugs of any sort, have been used in the past, the cotton chenille rug in brilliant, fadeless colors has created additional sales and profits for the merchant and manufacturer alike, along with additional comfort and beauty for the user.

In any case, there is vastly more profit to be gained, both by the individual and the industry, through the exploitation of cotton in new places, than in stagnating in present markets. In fact, we must locate new uses in order to expand and to hold our own with the industry which may produce a substitute for use in some of our present markets, and thus force us unprepared into a defense of the one fiber which is able to meet every demand that has ever been put upon it, a fiber whose possibilities we have only begun to conceive and explore.

Out *of the* Depression

An Analysis of Government Figures Which Discloses Interesting Facts for Use in Anticipating Conditions in 1931.

By E. G. Field
Wm. H. James & Associates

THE charts in this article are easy to read, and they are quite revealing. The dotted lines plot the activity during 1923, 1924 and 1925, in the cotton-textile industry, for the United States and for the South. Compare it with the solid line, which shows the activity for 1929 and most of 1930.

The article itself is short and clear, and will give you some interesting deductions and comments—THE EDITOR.

IT IS ALWAYS rather dangerous to make any statement of the possible future, and this is especially true after a long period of declining business volume. At this time we are going to trespass on this danger by suggesting that the cotton mills have turned the bottom of the present depression and are on the way out.

The general undertone of sentiment within cotton textiles seems to be entirely too bearish for the good of the industry. Several people have insisted upon proof that the mills can now look to more favorable conditions that accompany a gradual recovery. In submitting the evidence it will be shown that the operations have been slowly improving in late months and that history indicates this pick-up will continue upward.

Textile manufacturing as a part of the total business in this country follows rather significant and repetitive cycles of "booms" and "dumps." In general business, it is well established that most major depressions bottom at about 75 per cent of the long term average. General business includes many lines of foods, essentials, staples, etc., that help to limit the bottom point in any cycle. The textile industry bottomed at 60 per cent of the single-shift spinning capacity in the year 1924 and has again bottomed, this time at 65 per cent, in the year 1930. Here are three significant points: (1) the extent of depression in the cotton textiles is more pronounced than in general business, (2) there has been a better volume of spinning maintained in 1930 than in 1924, and (3) considerable recovery has already been made.

In substantiation of these points Chart 1, Comparative Capacity Operated, is presented. The dotted line covers the years 1923-1924-1925. The solid line has been drawn to date for the period 1929-1930-1931. The figures on these charts were taken directly from the monthly releases by the Bureau of the Census in the United States Department of Commerce. It is very noticeable that there has been a consistent monthly trend during the two periods under review. Starting with 1929 a little higher than in 1924, the mid-summer dip of 1929 was timed as in 1924 but of less intensity. This was made up at the close of the year with 1929 falling directly in line with 1924. Throughout the first half of 1930 the production was kept in advance of the condition in 1924 but, in spite of the resistance, a

CHART 1

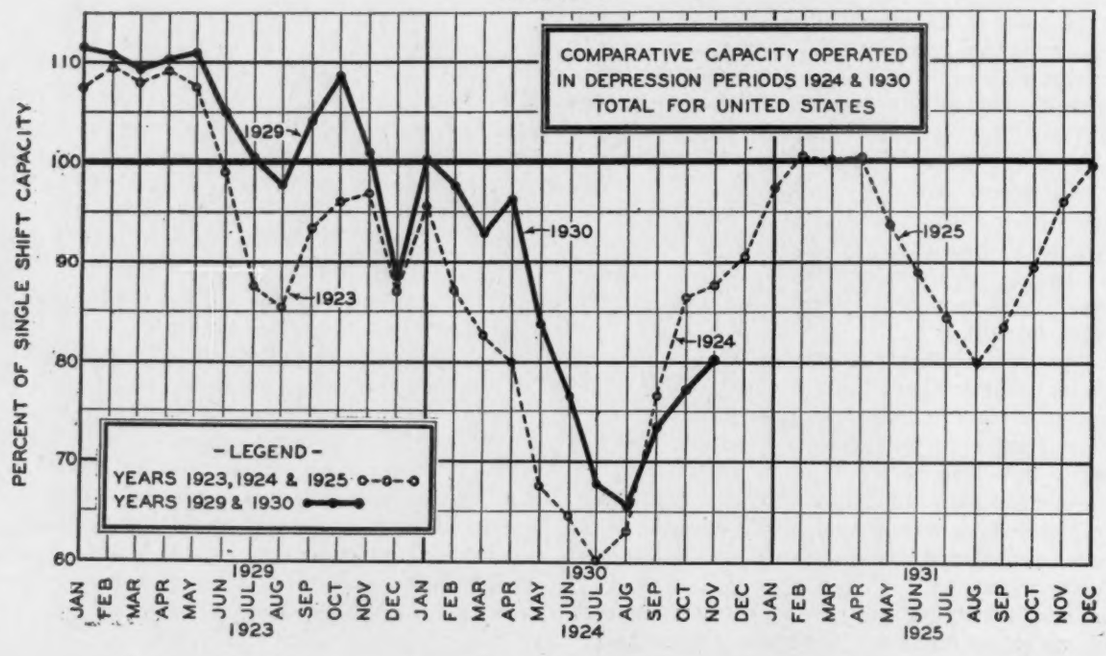


CHART II

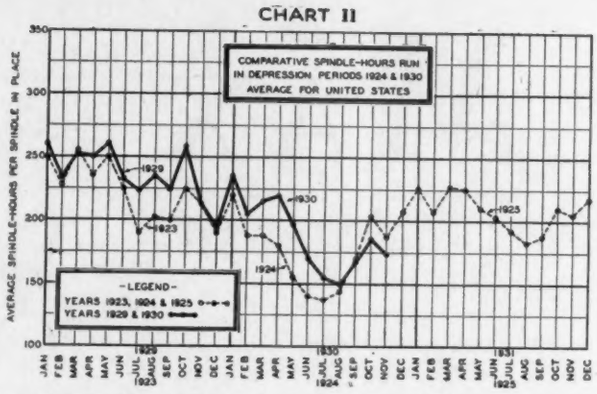
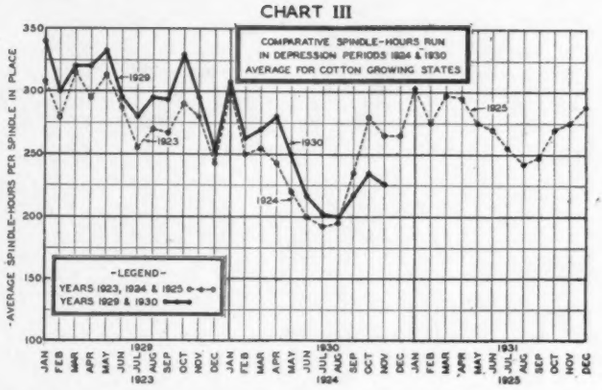


CHART III



Note: While the holidays in November reduced the Average Spindle Hours per spindle in place, as shown in Charts II and III above, the Capacity Operated relative to the work hours scheduled has continued upward as is shown in Chart I on the preceding page.—Editor.

similar slide occurred that bottomed one month later at a slightly higher point.

In Chart 2, Comparative Spindle-Hours Run in the Entire United States, further supporting proof is offered. Here the average spindle-hours in each month have been plotted. These hours are based upon the spindles in place. The general remarks about the previous chart will also apply to these curves.

In order to take a glance at the condition with respect to southern spindles, Chart 3 is shown to compare the Spindle-Hours in the Cotton Growing States. This curve may well be studied with reference to Chart 2 since it follows the same trend but is at a much higher rate and is somewhat more violent in action.

To bring out the close similarity between these two depression periods, the following tabulations are of interest:

	Depression Periods	
Chart 1—Per cent of total capacity	**1924-25**	**1930-31**
Start of the first year	107.6	111.6
Start of second year	95.5	100.3
Low in second year	60.3	65.2
Decrease in first year	12.1	11.3
Fall to low in second year	35.2	34.1
Chart 2—Total Spindle-Hours	**1924**	**1930**
Start of the first year	249	261
Start of second year	221	236
Low in second year	137	151
Decrease in first year	28	25
Fall to low in second year	84	85
Chart 3—Southern Spindle Hours	**1924**	**1930**
Start of the first year	308	341
Start of second year	299	308
Low in second year	193	200
Decrease in first year	9	33
Fall to low in second year	106	108

In this connection it may be well to note that the Fall to Low in the southern states is proportional to the Fall to Low in the average for all states.

Believing that the charts demonstrate that the bottom has been turned, it may be proper to glance ahead into 1931. The recovery should continue into the new year and if not "speeded" it is entirely possible that the third year fluctuation may be greatly reduced. The present trend of individual thought indicates that this early encouragement is very liable to be grabbed as an opportunity for immediate profits and it is very probable that production will be permitted again to soon be well ahead of sales. Here is a good time for the individual mill to demonstrate production control and thereby even out its manufacturing program.

Some improvement in selling prices is to be expected early in the year, especially in good specialties, but as a whole it is probable that the industry's excesses will continue to spoil the prices for some time. A study of the capacity used since 1921 will disclose the relatively few and short periods when production was above the full single-shift capacity. Still, much of the industry and in particular the lines in the South are being continually jumped-up in production or run-out. Much of the night work is the result of intentional efforts to accomplish low costs but in this the attention is not given to the practical necessity of balancing production to sales.

Total Operations Below Single Shift Capacity.

All of the capacity charts clearly indicate that total operations average well below a full single-shift capacity. On the other hand, business continues to be done at prices that can only be profitable when mills are run continuously on a double shift. Too much attention has been given to lowering costs through volumetric operations rather than by permanent improvements and progress that will directly result in goods at lower costs. In fact there has been too much loose talk about costs and a general ignoring of the probable profits for the individual mill's share in its part of the market.

The operatives will be glad to see the pick-up in operations—for the industry is well on the road *out of the depression*—occasioned by lack of the normal volume of work. As yet there are no signs of intention to improve the profit margins by insisting that sales prices be properly based upon the salable business. While there are many exceptional mill managers, their efforts are being neutralized by price cutters and the acts of executives who are not looking far enough ahead. However, it is to be hoped that these business experiences have taught some valuable lessons that will contribute profits in the coming years.

MIN and MAX

The Gold-Dust Twins of Industry

By R. A. Soniaman

MINIMUM AND MAXIMUM are the Gold Dust Twins of Industry. They are the Siamese Twin right-hand aids to Standardization; and Standardization is the foundation of successful management of industry today.

In the textile division of industry, it has been apparent for some time that if a firm is to continue as a going one, a money producer for its stockholders, it must adopt more or less the principle of standards.

There seems, however, in some establishments, a vagueness regarding the meaning of standardizing. The term is thought of in a loose, disconnected, general way, instead of something focussed clearly and strongly on certain phases of the business.

Perhaps the best way of getting at the true concept of standardization is to clip off a few of its syllables and shorten the word to standard. *Standard,* as defined in the dictionary is:

"Any measure of extent, quantity, quality, or value established by law or by general usage and consent; a weight vessel, instrument, or device sanctioned or used as a definite unit, as of value, dimension, time, or quality . . . ."

Now don't let anyone run away with the idea that Standardization is a giddy young flapper device, and therefore a dark horse which is somewhat to be passed up. Listen to what an authority says: "The first intimation to have a Standard in England, is that of 1120. King Henry ordered that the ell, the ancient yard, should be the exact length of his arm."

Evidently His Majesty must have had some trying experiences with the measure of a yard in ye olden times. And, probably, becoming disgusted with trying to decipher the cross word puzzle of divers sundry lengths resolved to solve the Gordian knot at one fell swoop.

The same scrambled situation holds sway today in many textile plants—not only the little places but also the big ones too. "Variety is the spice of life" is an old gag and seems quite popular in some mills; for a survey discloses the fact that in some concerns there are the 57 varieties of conditions and sizes where a dozen would do as well and save money for the company.

Some overseers, already handicapped—poor fellows—with a half dozen makes of speeders, will cap the climax by trying out a dozen different kinds of cone belts at the same time. Think this is exaggerated? Take an hour off and apply it to an intensive survey of conditions in your own plant! Look over the styles of the bobbins, the beams, the running times for the various units, see if the same kind of machines on the same kind of work don't have different speeds.

But to continue. A standard is a sort of a theoretical figure worked up to show what should be attained under the conditions which existed at the time it was evolved and which it is expected would substantially prevail at all times that the work for which the standard was set was being done.

It is the peculiar province of the standard to eliminate, or to reduce to a minimum, the confusion mentioned in the preceding paragraphs, and to bring an orderly, systematic, easily understandable, and efficient measurement of work, time, units, machines, speed, and whatnot, out of the chaos.

But, as all operating executives well know, the standard is a very elusive, will-o'-the-wispy kind of thing, firstly, to attain, and secondly, to maintain. It's like trying to walk a chalkline—always. And it simply can't be done—always.

Here is where MIN and MAX step in. They are the stabilizers of the standard; they are the practical assistants which make the standard possible of attainment at all times. They take the straight and narrow—chalkline of a standard, shall we say?—and make it a broad thoroughfare (See Fig. 1), which the workers can reach and in which they can remain with satisfaction and profit to themselves and to the firm, day in and day out as they pursue their duties.

A very simple example will illustrate how MIN and MAX are put to work. Take the case of spindle speeds on a spinning frame. Let's say that we consider 10,000 r.p.m. as a proper standard. Now it is manifestly impossible to hold the speed to a dead 10,000 r.p.m. day after day. No, there'll be variations. And if the firm had to juggle the speed daily to keep it on the chalkline it would soon prove a costly standard to maintain.

Min and Max

Can help you determine standards,

Assist in reducing surplus stocks of goods and supplies,

And yet provide you always with enough of each to prevent shut-downs

They can help make a profit, and

Keep good workers on the job satisfied.

Are you sure that you are taking advantage of the assistance these well-known twins can render? Soniaman undoubtedly has one or more ideas for you in this article.

But by putting MIN and MAX on the job the standard is easily held. Assume, for the moment, that a minimum of 9,900, and a maximum of 10,100 r.p.m. are considered as practically maintainable. Here we have an exemplification of what was a moment ago called a broad thoroughfare; we have a little leeway on each side of the chalkline; we have a road reachable and negotiable. If the speed falls below 9,900, then the cause should be ascertained and corrected; if it rises above 10,100, the reason likewise should be sought and steps taken to bring the speed within the limits set.

There are any number of such details in every textile shop which lend themselves to standardization, usually always with the adjuncts MIN and MAX; sometimes, however, only MIN is needed. Specific instances will be dealt with, some rather exhaustively, others having only the high spots brought out.

In a certain weave shed whose business was growing and whose floor space would not permit additional looms being put in the same building, the management seriously considered the advisability of having some of its work done outside. Upon investigation, however, it was discovered that the firm had relied somewhat too strongly on the traditional practice of figuring so many cuts per loom per week, without paying any special attention to the picks per minute, or the amount of time the looms were stopped for various reasons during the week or other operation periods.

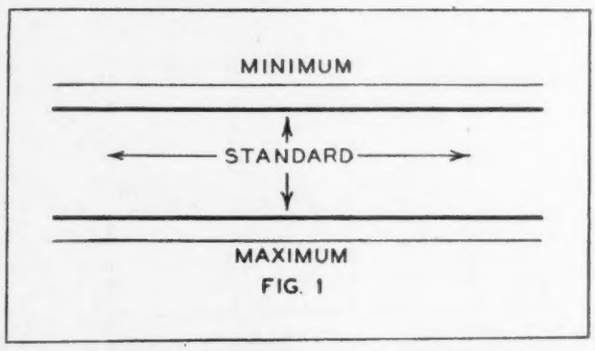


FIG. 1

"Min and Max take the straight and narrow—chalkline of a standard, shall we say?—and make it a broad thoroughfare, which the worker can reach and in which they can remain with satisfaction and profit to themselves and to the firm, day in and day out.

So a survey was instituted of the speeds of the looms. And the results were surprising, to say the least; for there were all sorts of speeds even where the looms were on the same material. Tests were then undertaken to ascertain the maximum picks per minute that could be run commensurate with an A-1 quality of product.

Having reached a satisfactory decision in this respect, arrangements were made to have the speeds uniform. A margin of 1½ per cent over and under was settled upon; that is, the minimum was to be not less than 98½ of the standard, and maximum not over 101½ per cent. When the picks per minute went below the minimum the cause was diligently sought after and removed, and if the speed went over the maximum, investigation and correction again followed.

Next a pick counter was fitted to each loom, and readings taken every night. This also brought to light some interesting variations in the total picks per working day. The discrepancy in some of the looms called for an immediate explanation which soon revealed that the underlying factors of the stoppages could be put roughly into three classes: (1) the material; (2) the loom; and (3) the worker.

With due diligence these were straightened out and ultimately, instead of letting out some work, the firm actually had to stop a small section of looms, which obviously solved its expansion problem for some time to come. It should be added that a standard was worked up for stoppages, in which while MIN and MAX had their parts, MAX was the one mostly stressed, with MIN as a sort of flexible figure, the smallest actually attained by any worker being each week held up as a figure which all the workers were urged to emulate.

Another mill had trouble with its spinning department. The labor turnover was excessive due to the spinners and doffers becoming dissatisfied with the work and leaving the employ of the firm. The latter was spinning a considerable variety of numbers of different grades of cottons.

Investigations disclosed the fact that the spinners were given a certain number of sides to run regardless of the counts or quality of the material on the frames. No attempt had been made to arrange the counts in such a way that the work of creeling and so on would be uniform for a certain wage. It was inevitable, therefore, that some spinners should have far more to do than others, and since the pay was the same, dissatisfaction had become rampant.

The same story was true of the doffers. They had their respective sides to look after, to be sure, but with no regard to the counts, so that some doffers had considerably more to do than others. A further evil in this particular mill was that the overseer in the spinning section was not a progressive man, but one who was a deal of an autocrat in his method of management, and who wouldn't listen to the complaints of the workers. With the result that his "get out if you don't like it" was very nearly literally carried out.

But the institution of a system of standard number of bobbins per doffer, disregarding the number of sides, and a sandwiching of the counts to equalize the creeling and other work for the spinners soon brought about working conditions that were fair and equable to workers and employers alike. With the natural result that labor turnover took a drop, the production increased, and the quality improved. Worthwhile results, surely!

Speeds are a fertile field for standardizing. There is often too much guesswork in the matter, with resultant unsatisfactory consequences in the way of excessive breakages, loss of production, discouragement of workers, a high labor turnover with its familiar train of evils, on the one hand; and on the other, speeds so low that although the work does run good and the workers are satisfied with their easily attended machines, the firm is losing money because of the low productive capacity of the machines.

It is well, therefore, to go into the matter of standard speeds for every type of machine and class of material. Once the standard has been established, the

MIN and MAX can be worked up, making it possible to bring about a practical attainment of the standard, day in, day out.

Oiling of machinery—one of the most important functions in the mill—can be made far more efficient when it is standardized, and will result in assuring longer life to running parts. Which, of course, means a reduction in the repair bill.

Some months ago a speaker at a meeting of mill men suggested that executives with sound hearts should look over their scrap heaps. From the writer's personal recollection of such visits he has no hesitation in saying that some real money will be saved by any firm which works up an oiling schedule standard. Every machine in the place should be gone over in regard to lubrication and a table made up showing where lubrication is required, what kind is to be used, how often applied, and by whom. A chart can be hung up in a conspicuous place in the department.

Stocks of yarn and roving, laps, and so on, can all be usually put on standard quantity with a MIN and MAX beyond which immediate attention should be given. The amount of money needlessly tied up by too great a stock in each section between the picker room and the shipping is no doubt enormous; while on the other hand, the needless loss of production due to part or entire stoppage of machinery because of insufficient stock is probably not calculable, although unquestionably considerable. Here then is a rich field for the introduction of standards with the two indispensables —minimum and maximum. (See Fig. 2).

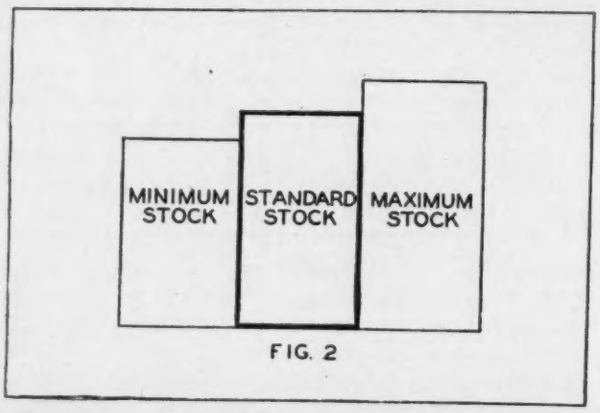


FIG. 2

"The amount of money needlessly tied up by too great a stock in each section between the picker room and the shipping is no doubt enormous; while on the other hand, the needless loss of production due to part or entire stoppage of machinery because of insufficient stock is probably not calculable, although unquestionably considerable. Here then is a rich field for the introduction of Min and Max."

Probably only those executives who have consciously invaded their supplies and spare parts stock room with an eye single to determining a practical standard quantity of material to keep on hand, have the slightest notion of the difference between a well conducted, standardized supplies and stock room, and one which is more or less a matter of a guessing match as to the quantities to keep on hand.

It is a risky piece of business to leave the matter of how much material to carry—brushes, brooms, picker straps, belting, travelers, and the 1001 things that have to be kept on hand to the discretion of a stores clerk. Intelligent though he may be, he is not a clairvoyant, he cannot foresee contemplated changes that will materially change the amount of stock to carry, and anxious though he undoubtedly is to keep up a proper stock without too great a superfluity there will be many times when he will over- or under-estimate the quantities required.

The supply room is too important a factor in modern textile manufacturing to allow any slipshod methods to prevail. Therefore it is advisable for the management to go into the matter in a thorough manner and to draw up a standard for each type of supplies or parts that it is desired to carry, and to have a minimum and maximum for each item. The latter should be of such scope that they will protect the firm from any production losing shortage of supplies, and also from an accumulation of surplus material which not only ties up money, rendering it unable to bring in a return to the firm, but which eventually results in a loss through the deterioration that seems to be an inevitable concomitant of mill supplies.

Teaming, trucking, cleaning, scrubbing, and dozens of other mill activities can all be standardized, and if safeguarded with MIN and MAX will all be done more efficiently and often more economically than where no attempt is made to prescribe a day's work other than in the traditional manner.

And where the standards are carefully worked up it is undeniable that the workers are far better satisfied knowing what is ahead of them each day, than when they are subjected to periods of specially hard work, interlarded with periods when they have little or nothing to do. A standardized day's work is a full day's work, satisfactory to both employees and to the firm.

In making up standards it must always be remembered that standardization should be an evolutionary—not a revolutionary — process. Further, in the establishment of minimum and maximum in connection with standards, attention should be given as to whether equipment, supplies, work methods, and layout are not susceptible to slight, inexpensive alterations which will permit an improved standard to be set.

Let it further be broadcast that MIN and MAX are not hidebound disciplinarians to be slavishly followed forever and a day after they have been set. Not at all! Should it any time be found that a change would be beneficial from the limits set, then by all means let the firm make the necessary alteration.

When working with MIN and MAX should any variation outside these limits occur, the deflection should be looked into and its causes brought to light and an explanation given. It does not take long to educate the workers to standards, and once set only the usual follow-up methods are needed to assure their being attained.

That a firm, large or small, once given over to the system of standardization will never go back to hit-or-miss, uncertain, often money losing methods of management is an absolutely sure bet. Business is carried on for the purpose of making money. And standards will help to bring this desirable object to fruition with the aid of MIN and MAX.

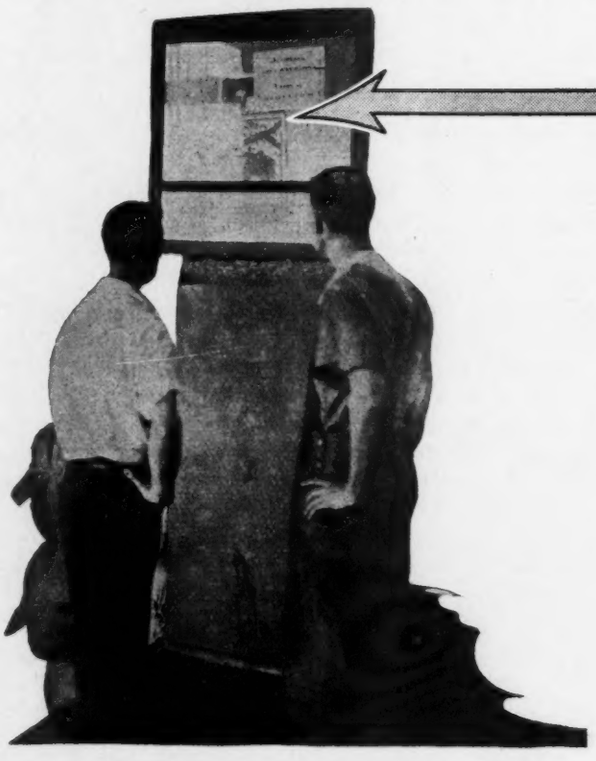
TALKING *to the* Operatives

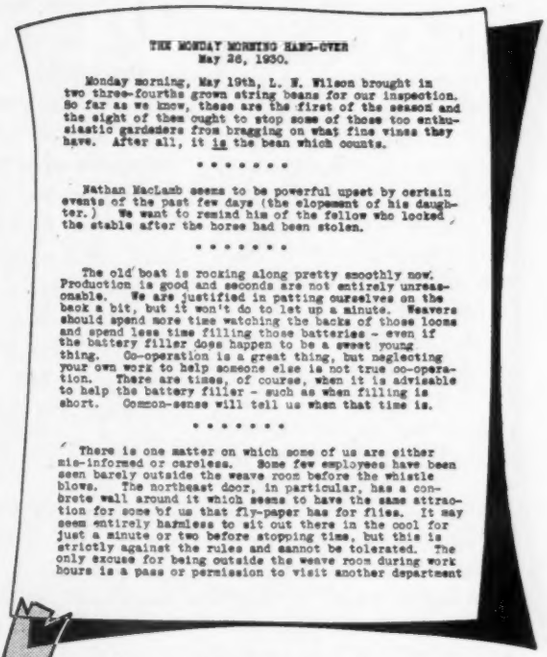
By P. B. Parks, Jr.

HUMAN NATURE is one thing that is fairly consistent. Especially is curiosity among mill operatives the same everywhere. Did you ever notice that a small "Lost" or "Found" notice posted over a drinking fountain in the mill will get more earnest and undivided attention from a mill operative comparatively speaking than the largest electric sign on Broadway will attract in New York City? He just can't pass up any kind of reading matter in the mill.

The idea struck me that this interest, curiosity, or whatever you choose to call it, might be utilized to the mutual advantage of the mill and operators. Why not give the worker something to read that will be of some value to himself as well as to the mill owners?

It is sometimes true that some mill workers are not naturally co-operative, with each other or with the management. This is a decided drawback and it struck me that a little properly placed psychology might go a long way toward overcoming this trait. My problem was to get them submerge a little of their individualism and to regard themselves more as a part of a larger unit—the department in which they work. With this in mind, I set about creating a new "departmental consciousness," using a weekly bulletin as a medium. The results were as surprising as they were prompt. So beneficial have these bulletins proven, that I think it worth while to pass the formula on to the other fellows who might use it to their advantage.





THE MONDAY MORNING HANG-OVER
May 26, 1930.

Monday morning, May 19th, L. N. Wilson brought in two three-fourths grown string beans for our inspection. So far as we know, these are the first of the season and the sight of them ought to stop some of those too enthusiastic gardeners from bragging on what fine vines they have. After all, it is the bean which counts.

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Nathan MacLamb seems to be powerful upset by certain events of the past few days (the elopement of his daughter.) We want to remind him of the fellow who locked the stable after the horses had been stolen.

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The old boat is rocking along pretty smoothly now. Production is good and seconds are not entirely unreasonable. We are justified in patting ourselves on the back a bit, but it won't do to let up a minute. Weavers should spend more time watching the backs of those looms and spend less time filling those batteries - even if the battery filler does happen to be a sweet young thing. Co-operation is a great thing, but neglecting your own work to help someone else is not true co-operation. There are times, of course, when it is advisable to help the battery filler - such as when filling is short. Common-sense will tell us when that time is.

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There is one matter on which some of us are either mis-informed or careless. Some few employees have been seen barely outside the weave room before the whistle blows. The northeast door, in particular, has a concrete wall around it which seems to have the same attraction for some of us that fly-paper has for flies. It may seem entirely harmless to sit out there in the cool for just a minute or two before stopping time, but this is strictly against the rules and cannot be tolerated. The only excuse for being outside the weave room during work hours is a pass or permission to visit another department

Please do not confuse this bulletin which I am about to describe with the house organs which certain large companies have been using for years in order to keep up the interest of their organization. My bulletin does not cover such a large field as these publications. It is entirely departmental—and therein lies its virtue. It serves a very definite need as a medium between the overseer of a large department and his employees; it creates a spirit of friendliness between the workers; and most of all, it inspires a "departmental consciousness."

In the accompanying illustration is a reproduction of a typical bulletin as it appeared in the writer's department.

This reprint may not be very enlightening to an outsider, but it contains news of importance to the workers who know the characters mentioned. To be effective, the scope of the bulletin must not be too great for its discussions outside the interests of the workers for whom it is written.

No set rule can be used all of the same, but a few simple pointers will probably help in writing of a bulletin of this type.

First, the bulletin should appear at regular intervals and be posted in the same places each time. I think that it is preferable to post them rather than give a copy to each person because all readers will go to the same places to read them. Very often, two,

three or four may be reading at the same time. This fact lends a community spirit and puts the worker in the correct frame of mind to absorb the type of matter in the sheet. The sheet itself can be typewritten on a plain piece of paper and pasted to the wall if no better system can be found.

Second, the bulletin should be short, snappy and concise. In the first place, the worker should not take the time away from his work to read a lengthy epistle, and second, his interest might pale.

This brings us up to the form and contents of the bulletin. Human interest happenings should be the first topic. There is nearly always some joke out on some one in the department, or some happening can be told in such a manner that it will be interesting to the people who know the character in question. By all means, paint up this happening and don't be afraid to exaggerate. Strict truth doesn't matter in fun. For instance, one of the loom fixers in my department is an inveterate fisherman. He had caught a rather large carp on the week-end previous to the writing of a bulletin in which I said:

"Some people get religion in very peculiar ways and under very surprising circumstances. It has been told, on very good authority, that some folks who happened to be standing near the river a few days ago, were startled to hear a terrible racket which seemed to come from the river bank. Someone was shouting and praying at the top of his voice. Fearing that murder was bein gcommitted, the folks dashed down to the river with the idea in mind to save a human life, if possible. What they discovered, much to their surprise, was a nineteen-pound carp at one end of a fishing line and R. D. Barrow on the bank at the other end of the line praying in a lusty voice, 'Oh, Lord, please don't let this here fish get away from me.'"

Now, to an outsider, this monologue doesn't appear especially striking, but when the character is well known to the reader, there is a big difference. No story should ever be printed that does not have someone in the department as the principal character.

Sometimes a little sarcasm can have a big effect on the whole department. For example, we had a weaver who kept his looms entirely too slovenly. He now keeps a very decent set of looms and the following excerpt is responsible:

"Don't believe anything you hear and only half of what you see. Last week the report got started that K. G. Horne had been caught, red handed, in the act of cleaning up his looms. This was investigated immediately and it must be admitted that there was not the slightest evidence to substantiate it."

"DEPARTMENTAL CONSCIOUSNESS" may sound high-brow, but, after all, it only means getting the workers in a department to thinking in terms of the whole, rather than about their own individual job. An overseer tells here of a plan he uses for developing this feeling among his employees, for getting them to see that to co-operate with the boss and with each other is only helping themselves. His idea is interesting. While it is not recommended for universal application "as is," because conditions differ, it may, we hope, provide others with a thought which they can develop to secure the same results.—THE EDITOR.

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This bit of sarcasm had a very beneficial reflection all over the weave room. The cleanliness of the whole job improved without any additional urging from any source. The next paragraph in the bulletin for that week ran:

"We have some weavers whose looms are not a credit to them. Folks passing through our room do not know us and hence the only opinion which they can form of us is based on just what they can see. They would get a good opinion of C. R. Cole, W. D. Lovett, D. F. Stephens and a lot of other weavers—what about you?"

Making the news highly personal is the secret of holding the workers' attention. The fact that the bulletin is published by the overseer or superintendent makes the operatives feel that the management is taking a personal interest in them both individually and as a group.

Another item that should always be included is the percentage of production and of seconds for the whole room for the previous week. It is surprising how much interest can be aroused in establishing a new high-water mark. If a friendly rivalry can be started with some other department of the mill and the results published in the bulletin, the interest will be found to be amazing.

I tried a series of educational paragraphs with marked success. Over a period of several months, I devoted the last paragraph of each weekly bulletin to a discussion of the duties and responsibilities of some one particular job. This policy was continued until all of the jobs in my department had been covered in detail.

The effect was marvelous. Everyone read the discussion of his own job and that of every other employee in the room as well. The better knowledge of the room organization which he gained in this way enabled him to run his own job in such fashion that it would dove-tail with the interests of the other workers with whom he came in contact. Every overseer knows the advantage of such a condition. Thereafter I found that my own job was much easier to run. I didn't have to straighten out so many little snarls and arguments which so frequently arise from the lack of understanding, on the part of some operative, of the ultimate aim in each process.

A good part of the benefits to be derived from getting out these weekly sheets accrue to the writer himself. It is impossible to get up the items intelligently without making a careful analysis of your organization. This analysis is bound to put you in closer touch with your job and in greater sympathy with the workers in your department. Most of us will have to admit that we have too slight acquaintance with most of them.

Whitin Machine Works Purchases Fales and Jenks Machine Co. and Woonsocket Machine & Press Co.

WHITIN MACHINE WORKS, Whitinsville, Mass., have purchased the Fales & Jenks Machine Company of Pawtucket, R. I., and the Woonsocket Machine & Press Company, Inc., of Woonsocket, R. I., according to a statement released last month. This announcement is of unusual importance and interest in the textile industry. The Whitin announcement of the negotiations follows in part:

"The Whitin Machine Works has announced that it has completed negotiations with the Fales & Jenks Machine Company of Pawtucket and the Woonsocket Machine & Press Company, Inc., of Woonsocket, R. I., for the purchase of the plants of these concerns.

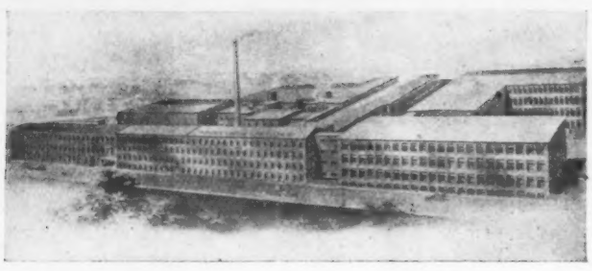
"It is interesting to note that this marks the passing of the Fales & Jenks Machine Company, which is one of the oldest machine shops in the country, the business having been founded in 1830 in Pawtucket, and which is now passing through its 100th year. The principal product has been ring spinning and twisting machines, and its machinery is known throughout the world for its excellence.

"The Woonsocket Machine & Press Company, Inc., dates back to 1873, and is known as one of the principal manufacturers of cotton roving machinery. In late years it has developed preparatory machinery such as picking, carding and drawing.

"The Whitin Machine Works is one of the large companies manufacturing textile machinery in this country, and this coming year, 1931, will mark its 100th birthday. The development of this concern has remained continuously in the hands of the same family since its early beginning. It has developed and diversified its line of machinery perhaps more than any other machine shop in the country serving the textile trade, in that today it offers not only the preparatory machinery for making cotton yarns, but also builds a complete line of machinery for the manufacture of woolen, asbestos and cotton waste yarn, and substantial lines of machinery for the manufacture of worsted and silk, and is about to present a line of machinery for the manufacture of rayon and synthetic fibers. With the acquisition of the lines of machinery made by Fales & Jenks and Woonsocket, the Whitin Machine Works expects to present to the trade an exceptionally well-rounded line of machines touching the production of every class of yarn made from all fibers.

"By bringing together these various lines of machinery under one roof, a concentration of manufacturing and development facilities will result in better service to the cotton, wool and allied industries. It is intended to retain those lines of machines formerly manufactured by Fales & Jenks and Woonsocket, particularly the roving and picking machinery made at Woonsocket and the spinning and twisting at Fales & Jenks, in the line of machinery manufactured by the Whitin Machine Works.

"Whitin also hopes to retain those men in its employ who have successfully built up and developed these machines to their present high standard of excellence. Complete arrangements will be made for the transfer of patterns and tools, so that the repair service for existing machines heretofore manufactured by Fales & Jenks and Woonsocket will be adequately carried on."



Top row, present plant of Whitin Machine Works; and E. Kent Swift, treasurer and general manager. Bottom, plants of Fales & Jenks Machine Co., and Woonsocket Machine & Press Co.

MUTUAL PROBLEMS *of the* Mill *and* Finisher

By Richard W. Arrington
Vice-President, Union Bleachery

"We want an article for some future number of COTTON, written by a commercial finisher, and addressed mainly to the gray goods mills, (1) stressing the need for a greater co-operation and understanding between the mill and finisher, for the good of both; (2) and pointing out specific instances in which mills might be of material assistance to the finisher, for the benefit of all concerned, including the customer."

The above quotation and request represent my assignment and my reason for attempting an article on this subject. This question is an old one on which much has already been said and written and it is, therefore, not an easy matter to project new thought on such an old subject.

All of us, in whatever line of business we happen to pursue, are fully convinced that our particular business, whether cotton mill, finishing, hosiery, shoe, automobile, or what not, is the worst possible business with more cut throat competition, abuses, complaints and troubles than anybody else could possibly have. That is true if we sit back and dwell on our troubles and begin to pity ourselves, but if we will try to forget that times are so hard and let our thoughts run along more constructive lines of improving our product, increasing our efficiency, and decreasing where possible some of our leaks and losses, we will wake up some day and find that after all the world has not come to an end but that it will continue and we might even find that the impossible has happened—that we are actually making a little money.

We asked Mr. Arrington to prepare this discussion because we felt that the subject should be emphasized, and because we knew he could present it forcibly. We would welcome further comments on the subject from both mill men and finishers, with a view to developing a greater understanding.—THE EDITOR.

We mustn't theorize too much though, for this is a practical problem before us and as we are all human we must realize that and see what we can do to counteract some of our human frailties. One of the worst of these, whether it be mill man or finisher, is that when something goes wrong to immediately start bulding a case against the other fellow. We are all of us naturally selfish and are naturally trying to save our own hides, even at the expense of the other fellow. I have seen so many times when some trouble would develop where the finisher, instead of searching out every possible source of trouble in his own plant, would immediately start building a case against the cotton mill. It also works the other way, where the mill man will immediately say that it could not possibly have happened at the mill and fight it off as long as he can without even properly investigating it from the mill end. I have seen cases where a mill would disclaim responsibility for a fault and later discover they were at fault, but never admit it, hoping the whole thing would blow over. Probably the same thing could be said of finishers.

It is unfortunate that this condition prevails, because after all our interests are mutual. Each needs the other, each can help the other and each can hurt the other. Can we not in some way, when troubles do develop, approach them with an open mind, determined to find the facts and to shoulder the burden if it happens to fall our way? The only definite suggestion I have to offer as a possible means of bringing this about is that the Southern Textile Association have each year a committee composed entirely of mill men and known as a finishers' committee, whose duty it would be to contact all southern finishing plants within a reasonable radius, going in person to those plants and spending say half a day at each one, where they could be taken through the plants and could see some of the finishers' problems. They could then sit down with the superintendent, and possibly some of the foremen, and get first-hand information of troubles the finisher had from gray goods. They could take notes of those various faults, after having seen in the finishing plant the trouble they caused, and these various notes and visits should make the basis of a very interesting report and discussion for the next meeting of the Association. These visits would also give the mill men a splendid opportunity to get over to the individual finisher some of the trials and tribulations that confront the cotton mill, and it is conceivable that they might even convince some finishers that after all the mill men are not so hard-boiled and unreasonable as they are pictured.

All of which gets back again to the fact that the interests are quite mutual. It is not enough for either mill or finisher to develop a superlative ability to pass the buck on to the other, or by convincing argument to get from under something which he knows deep down in his heart is his own responsibility. More should it be the aim of each to give of his time and talents to developing a finished product which will meet with the approval of the converter and through him with the garment manufacturer and finally with the consuming public. Any person or any organization that can bring mill and finisher together, with the proper mental attitude toward each other and toward their common problem of the best possible finished product, will

have accomplished a worthwhile service to the industry.

I have rather strayed away from the subject assigned me so I will return to it. There are many ways in which mills can improve their product in the eyes of the finisher:

Suggestions to Gray Mills.

(1) Do not ever pack misweaves as first quality goods. They are quite apt to cause unnecessary loss of yardage by burning in two on a singer, and can easily cause damage to much yardage by splitting on either mercerizer or tenter.

(2) Always remove if possible all hanging threads from selvages, particularly on seconds. Usually seconds are not singed and there is no chance for the finisher to remove the hanging threads by processing.

They often cause oil damage to much yardage in later processes.

(3) Be quite careful about ingredients used in sizing. This can easily cause a finisher much grief. If possible consult a finisher about the sizing material being used and if agreeable have him analyze it to see if anything detrimental is being used.

(4) Never use colored threads for marking defects. If they are not seen and removed by the finisher they will bleed onto the white goods when being bleached.

(5) Never fold two pieces into one—it causes the finisher a lot of trouble. If the goods are short lengths, fold each piece to itself.

(6) Always mark the bales with as much information as possible; such as, number, yardage, construction and shipper. This makes identification easier by the finisher. Also be sure to put a baling slip in the bale.

(7) Never mix two constructions in the same bale. This may seem like a useless caution but it is surprising how often, particularly on plain goods such as print cloths, sheetings and broadcloths, a piece or two of a different construction in some way gets mixed in a bale. If the finisher, as he very often does, is fortunate enough to catch it before processing no damage is done, but if he does not and it goes through and out to the garment manufacturer, the first thing the finisher knows is that there are so many dozen garments with two different constructions of goods in them. Then he has the bag to hold because it is very easy to see how simple it would be to convince a mill that it was mixed in the gray.

It is surprising how much difference there often is between the same fabric made at different mills, and what a difference there is in the finished result between two fabrics that count and weigh the same and which have had identical treatment in finishing. It is no wonder then that the finisher many times has the question asked him: "Who makes the best print cloth, sheeting, duck, broadcloth—or some other fabric of such-and-such a construction?" Naturally the finisher will tell his customer the name of the mill whose product finishes up best, because it will look as if the finisher has done a better job on that fabric than on some other. The hardest job the finisher has is to make a good job out of a poor piece of goods; in other words, make a silk purse out of a sow's ear. It is a much easier job to do a good piece of finishing on a good cloth to start with.

There are many other points of mutual interest that could be mentioned but I feel would not do one-tenth the good in mentioning them in an article of this kind as would be brought about by a personal discussion of them in some manner similar to that outlined. I commend this thought to some of our various associations, with the feeling that practically all of the southern finishers would be more than glad to lend any assistance possible in co-operative effort with the cotton mills.

N. C. Cotton Manufacturers Meet.

The Cotton Manufacturers Association of North Carolina held their business session of the winter meeting at the Carolina Hotel, Pinehurst, N. C., on November 21 and 22, which was very well attended.

Following an afternoon of golf and a banquet on Friday night, the program was continued Saturday morning with a meeting of the executive committee at ten o'clock, at which time the enlarged research program of the Arkwrights was heartily endorsed. The committee expressed themselves as being thoroughly in accord with the new plan of the Arkwrights, and pledged their cooperation and support in the promotion of thorough and comprehensive practical research.

The general business session followed that of the executive committee, and at this time Bryan W. Sipe, of the North Carolina Department of Conservation and Development, discussed reactions and developments of the recent "Made-in-North Carolina Campaign." He offered suggestions for better merchandising practice, representing the opinions of prominent retail merchants. The meeting was considered of a very constructive nature.

Thank You, Mr. Sloan!

George A. Sloan, of the Cotton-Textile Institute, was the donor of one of the most representative Christmas gifts during the past season that we have witnessed since we have had the pleasure of seeing the seasons of Yuletide come and go. It was a present that would cause those receiving it to realize just how well directed thought is very applicable in giving.

This Christmas package, which has brought forth many favorable comments from those seeing it, consisted of: two cotton cravats, one bag of pecans from Howell Nut Shops, Cairo, Ga., in a cotton bag; one Motorist Convenience Kit in a cotton bag and with cotton wiping and rubbing cloths; a dozen oranges in a cotton mesh bag; and one cotton bag filled with Aroostook County potatoes from H. B. Kelly & Co., Caribou, Maine.

The package represented an assortment of useful gifts and indicated in an appropriate manner, some of the many diversified uses to which cotton is being put. In most of the applications illustrated in the Christmas box, the Institute has had a very large part in their successful development.

Textile Chemists *and* Colorists Meet *at* Chattanooga

THE ANNUAL MEETING of the American Association of Textile Chemists and Colorists was held at Chattanooga, Tenn., on December 5th and 6th. This was the second convention of the parent organization to be held in the South, where there are two flourishing sections in operation. Five years ago, an annual meeting was held in Charlotte, N. C., with the Piedmont section as host, and this year's meeting was conducted under the auspices of the South Central section as host.

An elaborate and exhaustive program of technical papers and discussions was executed by the association, during three full sessions. This was interspersed with a thoroughly enjoyable and inspirational program of entertainment provided by the Chattanooga entertainment committee, under William J. Kelly, Jr., chairman. Robert S. Wheeler, superintendent of the Crystal Springs Bleachery, is chairman of the South Central section.

A digest of some of the papers presented at the meeting, by Harold Schroeder, is sub-joined to this report. In addition, of general interest, the papers included discussions of research in cotton textiles, by H. H. Willis, director of the Clemson College Textile School; a report on textile conditions abroad, by Charles E. Mullin, of the same organization; a discussion of chemistry as applied to finishing, by Paul F. Haddock, of A. Klipstein & Co.; a report on the construction of Celanese Fabrics as related to dyeing and finishing methods, by Harry Price, of the Celanese Corporation of America; "Padding: Its Limitations and Possibilities," by Dr. E. W. Pierce, of Ciba Co.; "Starch in Textile Finishing," by Ira L. Griffin, of Stein, Hall & Co., etc., etc.

Dr. E. H. Killheffer, Retiring President.

P. J. Wood was elected president of the organization, succeeding Dr. E. H. Killheffer, of the Newport Chemical Works. Mr. Wood is vice-president and general manager of the Oriental Silk Printing Co., Paterson, N. J. W. H. Cady, of the Slater Co., Webster, Mass., and H. A. Barnes, of the Proximity Print Works, Greensboro, N. C., were named as vice-presidents.

The entertainment program provided a buffet supper on Friday evening, December 5th, which included entertainment by local performers. The concluding feature of the meeting, following the two sessions on Saturday, December 6th, was the annual banquet on Saturday evening, with R. S. Wheeler as toastmaster. Speakers included Mayor E. D. Bass, of Chattanooga; Dr. E. H. Killheffer; P. J. Wood; Robert W. Philip, editor COTTON; and Dr. D. W. Daniel, of Clemson College. An excellent program of entertainment, of a distinctly southern character, was provided during the banquet, which was followed by the annual ball, in the ball-room of the Read House, where all of the sessions were held.

In the summary below, a consistent attendant at the sessions of the convention has presented a digest of what he heard at the meetings, as the papers impressed him as a typical listener-in.

By Harold Schroeder

WE HAVE all of us become so accustomed to using Monel metal that it will perhaps come in the light of news to hear that metallurgists are still working very earnestly on other alloys which are to be used in the making of dyeing and bleaching machinery. Speaking of Monel metal, the first paper read was of interest to hosiery dyers. A certain dyehouse had in its dyehouse a number of Monel metal dyeing machines—one machine refused to act like the others and when using a certain dyestuff always produced an off-shade.

Naturally this would be blamed on the metal but since all the other machines in the dyehouse were also Monel the cause of the trouble could hardly be due to metallic action. A great many things were tried without result but gradually the reason was found, and the paper was of interest to dyers since it showed the dogged perseverance with which one particular dyer stuck to his problem until it was solved.

The actual cause was found to be due to the reducing action of sericin on the dyestuff, in the presence of a small amount of alkali and in the absence of air. What kept the air away? Well, this particular machine was so designed that the dyebath was not churned as as much as in the other machines, and, so because the goods weren't splashed enough, the sericin from the silk ate up the air and then started to work on the dyestuff. The remedy for the trouble was to introduce air into the dyebath.

A paper on chrome nickel iron and other alloys gave good working instructions to engineers and master mechanics connected with the manufacture of dyeing machines. The tone of this paper was probably more a promise of what is to come than a statement of products actually in common use but the meeting was told that these alloys can be welded by any method, can be forged, drawn into wire, sheets or stampings and because of the unusual tensile strength these sheets will be thinner than we use now for tanks and so forth. For complete protection to corrosion the speaker stated that a high polish is essential.

Maybe you cannot use mineral oils to make soap, possibly some of us had thought that mineral oils were not of much value outside of a crank case but it seems that it is now possible to sulphonate mineral oils, just like vegetable oil, and a very interesting paper on these mineral oil sulphonated products was presented. It did not meet with unanimous approval on the part of those listening, some thought that to draw comparisons between a laboratory product and existing commercial but unnamed products was not exactly what was wanted, but the paper did bring out that these sulphonated mineral oils possess such valuable properties as being stable to heat, ability to stand hard water. These sulphonated mineral oils have no powers of penetrating, nor by themselves of softening, surprising as that might seem. Their potential value to the dyer and the finisher is their powers of emulsifying other oils and so carrying these oils into the fiber. Sulphonated mineral oils are thus to be compared with sulphonated animal and vegetable oils only on the basis of *emulsifying* power, *not* on the basis of combined softening, penetrating and carrying power.

P. J. Wood, the New President.

Why do wetting agents wet out? That is something we would all like to know and a paper entitled "Evaluation of Wetting-Out Agents" explaining these matters held the gathering in their seats for over an hour and right near lunch time, too, on a bright sunny morning.

If you are skilled and patient and not especially butter fingered you can with care induce a needle to float on water. Even after you succeed it isn't much of a trick but it does go to show that the surface of water is like a rubber sheet drawn tight and capable of carrying loads. A cotton fiber in water is like the needle, it lies on a skin of water.

An efficient wetting-out agent works because it has the power of chewing holes in that film of water, lowering the surface tension, the skin is removed, the "needle" or the cotton fiber sinks and then the wetting agent does the same thing to the fats and waxes in the cotton fiber. It does not, necessarily, remove the fats and waxes but it bores so many holes in them that the water can get in and climb around and about.

But an efficient wetting-out agent does one more thing. It has the power, like the general in command of an army, of concentrating its forces, the wetting-out chemicals, right at the place where it will do the most good. Place a skein of cotton on top of a solution of a wetting-out agent and what happens? The molecules gang together and crowd all up to the place where the cotton is, so the wetting out solution is stronger where the cotton is than down at the bottom of the tank. No wonder the cotton gets wet out and sinks all at once with all that mob of molecules around it!

This paper was again comparative in its purpose. It compared the alkyl napthalene sulphonic acid derivatives with sulphonated oils and soaps. Everybody seems to take a crack at sulphonated oils but these well known products came smiling through and emerged just as valuable to dyers as ever, when used correctly and intelligently as all good products ought to be. For this reason, suppose we grant, as the paper stated that sulphonated oils lose their power of wetting out, accent on the wetting out, above a temperature of 140 degrees F.; practically every dyer puts the oil into his dyebath in the cold and then turns the steam on, so, using a good quality of oil, it has plenty of time to wet out before the temperature reaches the critical point of 140 degrees F. From then on, even if the oil no longer wets out, accent on the wets out, it still, as the paper stated, is actively emulsifying the fats and waxes on the cotton, and emulsifying a fat or wax is one good way of mixing it with water. So we may assume that by the time the temperature of the dye-bath has travelled from cold to the boil in the presence of a good oil that the cotton is quite well wet out.

Sulphonated oils also possess the property of concentrating at the interfacial field, that is to say of collecting where the oils will do the most good, as near to the cotton fiber as they can possibly crowd. But right now, here we begin to see the cardinal difference between a sulphonated oil and the alkyl napthalene sulphonic acids. The sulphonated oils concentrate near the cotton, then *on* to the cotton and so the yarn is both wet out and softened. In other words, the sulphonated oils exhaust something like a cotton dyestuff onto the cotton fiber while the alkyl napthalene sulphonic acid derivatives act like an acid dyestuff, merely *touch* the cotton without progressive exhaustion.

This long known property of sulphonated oils of gradually becoming a part of the cottton fiber is very convenient most of the time but it is just as possible that for package dyes, a dyer may take his choice between wetting out *without* absorption of the wetting agent or wetting out *with* absorption.

The paper demonstrated a new and clever method of comparing wetting-out agents which is so practical that any mill man can use it. A skein of yarn is taken and a small lead weight, 3 grams of lead for a 5-gram cotton skein, is fastened to it. Then a heavy lead weight is tied to the skein by a silk thread. The whole contraption is dropped into a cylinder of wetting-out agent. The heavy weight pulls it down, the silk thread is tight. But the instant the skein is wet out the little 3-gram weight does its work and jerks the skein down. The completion of the wetting-out is so definite that it can be timed with a stop-watch. The paper stressed the possible completion of wetting out in the *cold* with the alkyl napthalene sulphonic derivatives, brought out the fact that the addition of a little salt assists the wetting out and mentioned that although soap is of itself not a wetting out agent small additions to the other wetting out agents are beneficial.

A paper on abnormal fading of mixtures of dyestuffs simply accented what every dyer should know, that you are not entitled to assume that the properties

(*Continued on page* 275.)

THE TREND OF THE TIMES

By DAVID LAWRENCE

Published in the Textile Industry
Only By Cotton

WITH news events in the business world passing in daily review, some of them favorable and some unfavorable, it has been difficult to maintain a perspective. And yet looking back over the last few months and looking forward to the fateful months of 1931, we are bound to admit we see more clearly with each passing day the great tasks of reorganization now in process.

Stabilization is like a panorama. Its compelling force has gripped industry after industry, and although we may not perceive it immediately in our day by day outlook, we know full well that commodity prices are slowly but gradually being stabilized and that money rates, at least, have found a natural level.

But what shall we say of public confidence? Has that been stabilized? The closing weeks of 1930 revealed a surprising lack of faith on the part of many people. It was mostly because they saw here and there a mortality in banks which they did not understand. There was really nothing surprising about the number of bank failures—the real surprise was that some of those banks which failed had held on so long. Back last February, the Comptroller of the Treasury, John W. Pole, told a congressional committee in open session that at the rate at which banks were failing at that time of the year, 1930 would see the largest number of bank failures in recent history.

So there was no secret about the number of bank failures expected for 1930. The usual rate of bank failures is about six hundred. 1930 had in the neighborhood of one thousand! Nor was it particularly unexpected to find occasionally a fairly large institution caught in the maelstrom of frozen credits or imprudent investments. Individual bank officers themselves, here and there, participated in the bull movement of 1928 and 1929, and it was only natural that some of the enthusiasm which carried them away in individual speculation should have affected their judgment as bankers.

But is it all attributable to imprudence? How many of the self-same loans which gave the banks so much trouble were the direct consequence of a period of inflation in which all values went sky-high? Certainly in examining some recent bank failures, we find that real estate played no inconspicuous part. One might say it is a faulty economic structure which permits of such wide fluctuations in the value of real estate. After all, the real estate market is affected by the money available for investment in buildings, and when there is an abundance of cheap credit real estate will get its share.

Lessons were taught in 1930, nevertheless, which will not soon be forgotten —at least not by the present generation. Appraisals which seemed good in 1928 and 1929 faded away in the brass-tacks appraisals of 1930.

To those who wonder at the length of the present depression, one must refer back to economic cycles of other periods of American history. I was talking with Secretary Mellon recently about the depression which began in 1873. It was just as fresh in his mind as if it had happened yesterday. He said it was much worse than anything we are experiencing today. Out of an abundance of experi-

ence with depressions, he says real estate is usually the last thing affected.

We may infer, therefore, that the storm which at first shattered the buildings of light construction has now swept with hurricane strength some of the stronger buildings. We may infer, also, that we are coming through the storm now and that the next few months will see the end of the most severe winds of trade.

What are the things that lift a country out of its depression and start it forward on the road to real recovery? Turning back the leaves of history, we find that new industries frequently arise to take the place of those that have lagged behind. We talk of "construction" as perhaps furnishing a stimulus to the whole business situation. It is a broad term covering many kinds of building, covering repairs, replacements and even the rebuilding of cities.

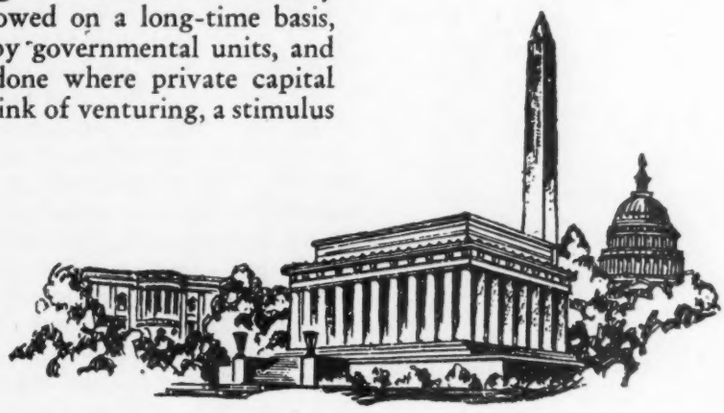
Some large plans have been suggested. It may be, for instance, that the rebuilding of the slums in many cities will completely restore the value of central sections accessible to business and convenient from a traffic viewpoint. Some of the best parts of New York City are on the East Side. In recent years, private capital has gradually restored some of those areas. It may be that funds will be available through the cooperation of governmental and private investors to rebuild whole blocks of the East Side in New York. Other cities may follow the same example.

If building costs are low and money can be borrowed on a long-time basis, guaranteed by governmental units, and building is done where private capital would not think of venturing, a stimulus can be given to real estate. These are some of the thoughts being advanced nowadays in the hope of rearranging the whole economic structure.

Meanwhile, the Federal Reserve System with its low rediscount rate, the slow but sure stabilization of many commodities at price levels that are attracting buyers, and lastly, the strengthening of public confidence, can not but give the beginning of 1931 a much more cheerful prospect than the nervous moments experienced by the financial world in December, 1930.

The final thing to remember is that it took nearly a year to wash out some of the troublesome situations which had been overhanging the business world, and that pessimism is a sequel to untoward developments rather than the precursor of unfavorable occurrences.

If one has the perspective of a long depression begun in the summer of 1929 and continuing perhaps for another couple of years, true encouragement can be derived from the gradual upturn of business during the new year. For even the pain of a three-year depression can be borne if we can know definitely that each month is an improvement upon the preceding month, however minute the improvement be. It is uncertainty which is bewildering and perplexing whereas certainty begets careful planning and intensive reorganization for the painful but necessary process of readjustment.



Electrical Developments *in the* Textile Industry *in* 1930

By H. W. Reding, Textile Engineer
Westinghouse Elec. & Mfg. Co.

IN A BRIEF and clear manner, Mr. Reding outlines here some of the more important major trends in electrical equipment progress in the textile industry during the past year.

He covers the development of the drive for single-process pickers; the rayon motor; individual drive motors; new switches for textile work; application of motors for spinning and twisting larger packages; textile motors with replaceable stators; improved sleeve bearings for motors; etc., etc.

The broadening application of vacuum tubes for counting, inspection and sorting, in the textile industry, is also discussed.

IF WE REVIEW the developments of the past year in applications of electrical equipment to textile machinery, it is evident that greater effort and greater success is being attained in making applications which reduce cost of operation. There are a number of methods by means of which this cost reduction is obtained. Perhaps the most outstanding ones are those exemplified by the drive now used for the single-process picker. The electrical equipment is an integral part of the machine and it is by means of proper electrical control that these machines are successful in reducing labor and producing a more desirable and more uniform product. Another example is the rayon motor. Recent improvements have made it capable of higher speed and the productive capacity of spindle is thereby increased in direct proportion. In other cases, electrical equipment has been made more rugged and reliable so that maintenance cost is reduced. In still other cases, cost is reduced by combining several pieces of equipment into one structure.

To an increasing extent, the textile industry is beginning to realize that the motor and control are important parts of a producing unit. Regardless of the qualities built into a spinning frame or picker unit, proper results and low cost cannot be obtained unless the electrical apparatus is designed to supplement and complete the equipment.

An item of interest is the equipment for individual drive of looms which reduces cost of operation due to lower maintenance. The accumulated experience of the industry and the increasingly rigorous modern requirements have indicated the need of certain characteristics and featured in motors of this type, and a line of motors meeting these requirements has been placed on the market during the year.

To protect loom motors, it has been universal practice in the past to use switches protected by thermal overload plugs. All of these switches have been the source of difficulty and production loss. During the year, switches have been produced which provide overload trip features instead of the overload plugs. If the switch should be open due to a prolonged overload on the motor, it is not necessary now to renew some form of link, but is merely necessary to re-close the switch after the equipment has had a suitable length of time to reach correct operating temperature. These switches give greatly improved protection to the motors and at the same time reduce personal and fire hazards.

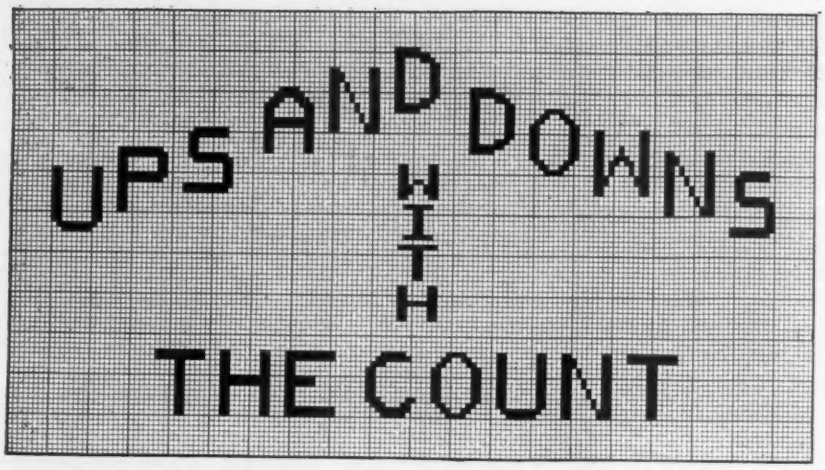
The trend in modern spinning and twisting frames is decidedly toward heavier machinery handling larger packages and operating at higher speeds. These frames require motors of special characteristics and the motors are now available which have starting torque which will start the frame even under adverse conditions, and which will then accelerate the frame smoothly and without undue strain to its full speed.

Another outstanding development of the year is the development of a line of textile motors having replacable stators. The entire stator structure of iron, complete with winding, is removable from the frame so that in case of damage to the winding due to overload or accident, the entire stator may quickly be removed and be replaced by a new one. This plan saves most of the time and much of the cost as compared with the older plan of putting a new winding into the damaged motor.

Another item of interest, calculated to reduce cost, is an improved sleeve bearing for motors recently offered. This bearing removes the necessity for frequent inspection and lubrication. Inspection once a year is all that is required. To make this possible, the oil must be kept in the bearing housing, thus avoiding oily windings and drip pans.

In other branches of the textile industry, there are the same trends toward higher speeds and more severe service on the electrical equipment. Silk spinning motors are now available which have unusually liberal ratings so that the motor will safely carry the higher spindle speeds now being operated in many cases. In the rayon industry, there is a decided trend away from the use of the moulded composition spinning bucket, and toward the use of the Micarta spinning bucket. This again is a question of speed. The older type of material does not have the inherent strength required for reliable service at speeds of 7500 r.p.m. and higher.

(*Continued on page* 275.)



Fifth of a Series of Articles on Textile Designing

THIS fifth article continues the series on textile designing, and discusses satins, construction of the satin weave, granites, granites from satin basis, constructing granites by reversion and re-arrangement, etc.

The author repeats his invitation to answer any questions on designing which may be submitted by readers.—THE EDITOR.

Satins.

PERHAPS it is best to introduce this subject with a brief explanation of some related and highly similar terms. A satin weave is a weave of which no adjacent ends have raisers on the same or on consecutive picks. This sentence defines a filling satin. In the case of a *warp* satin it would be: a weave of which no adjacent ends have *sinkers* on the same or on consecutive picks. The word *satin* is used here to denote the manner in which the warp and filling threads interlace. There is no reference to the material out of which the warp or filling yarns are made.

Now, when we speak of *fabrics*, the word *satin* is used to designate a cloth made entirely of real silk yarns and woven in the satin manner. Since the successful introduction of synthetic fiber yarns, (rayon) "satin" is being broadened in its scope to include fabrics made from these yarns also.

Still referring to fabrics, a *sateen* is a fabric made from cotton yarns and woven in the satin manner. In some sections, sateen is used to designate a fabric employing woolen yarns in this manner of weaving.

The term *satinet* is sometimes used to apply to either a cotton or woolen fabric, or to a fabric with a cotton warp and woolen filling. In any case, a satinet is made with a satin weave.

Now, our object in mentioning these terms is to prevent any possible confusion when we use the term "satin" in these articles. We will always use it to designate *weave* and not fabric. Thus when we refer to a 5-harness satin we mean a fabric made according to a special plan of weaving, without any regard to the nature of the yarns used.

The most popular of the satin weaves are the 5-harness, the 6-harness, and the 8-harness. Satins can be made on a greater number of harness, but the floats become so long that they are seldom used except on highly specialized fabrics which we will not discuss here.

Construction of the Satin Weave.

In constructing satin weaves, the most simple method of procedure is by "counters". In this method we first decide on how many harness we will use. Then we divide the number of harness into two unequal parts so that these two parts are not both divisible by any third number. Also, neither of these parts into which the number of harness is divided can be the number "1" (one). Then the numbers representing the respective parts into which the number of harness is divided become "counters." To illustrate: suppose we decide to make a 4-harness satin. Well, the only parts into which "4" can be divided are 2 and 2 on the one hand, and 3 and 1 on the other. But our rule says that the parts must be unequal, so that throws out the 2 and 2. Then looking at the other division, 3 and 1, we remember that neither of the parts can be "1". Then what are we going to do about it? You guessed it—we will leave it alone. And rightly so, too, because there is no true 4-harness satin; you will always get two raisers together on adjacent ends and consecutive picks.

Take a good breath now and we will move on to the 5-harness. Here we have a 4 and 1, and a 3 and 2. First off we throw out the 4 and 1 on account of the presence of the "1". How about the 3 and 2? Looks all right, eh? They are unequal parts, they are not both divisible by a third number, and neither of the parts is the number "1". Thus we find that 3 and 2 are "counters for the 5-harness satin. We use only one of them for each weave, so we find that we have two different weaves for a 5-harness satin.

The following remarks apply to *filling* satins—to make them applicable to warp satins, substitute sinkers for raisers. Let us assume that we are required to construct a 5-harness filling satin with 3 as a counter. See Fig. 13. First we put a raiser on the first end on the first pick, starting in the lower left-hand corner of the design. Then we add the counter to the first end and get 4, which tells us that the fourth end is raised on the next pick. Then we add the coun-

ter to the fourth end and get 7, which means that the seventh end is raised on the next pick. But our weave repeats on 5 ends and 5 picks; what do we do about this? Easy, the seventh end in the design shown in Fig. 13 is the second end in the second repeat, since the sixth end starts a new repeat. So the second end weaves like the seventh end, and we put a raiser on the second end on the third pick. Adding the counter to the second end we get 5 and put a raiser on the fifth end on the fourth pick. Adding the counter to the fifth end, we get 8. Since we see that the third end weaves like the eighth end, we put a raiser on the third end on the fifth pick, and the weave is com-

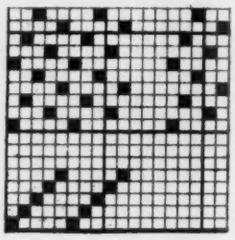


FIG. 13

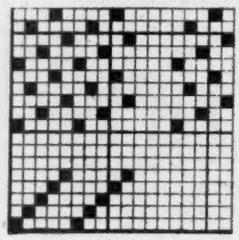


FIG. 14

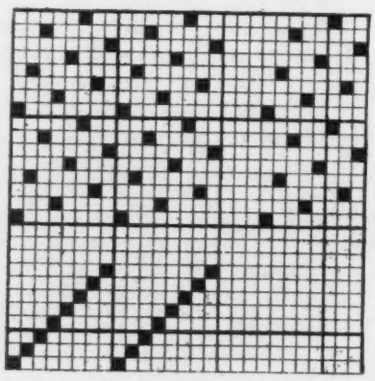


FIG. 15

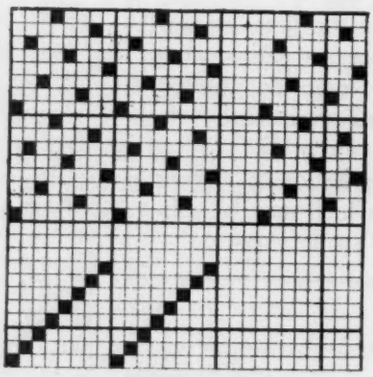


FIG. 16

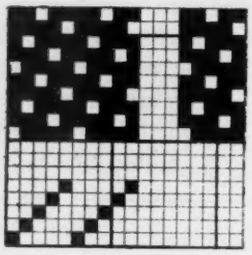


FIG. 17

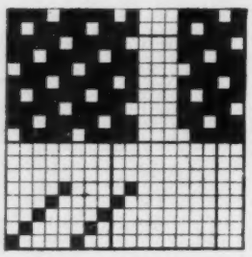


FIG. 18

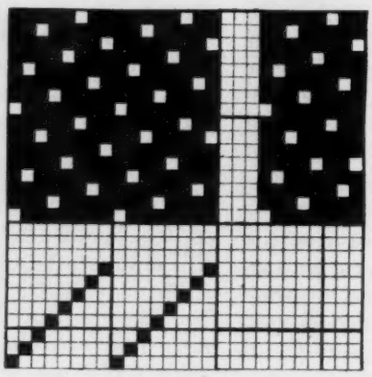


FIG. 19

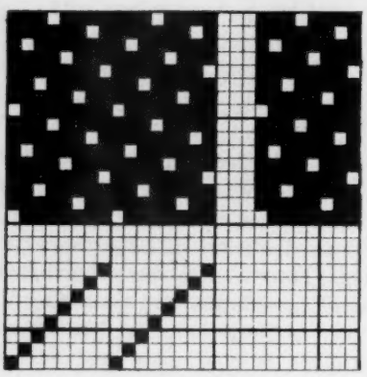


FIG. 20

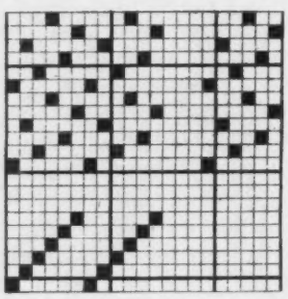


FIG. 21

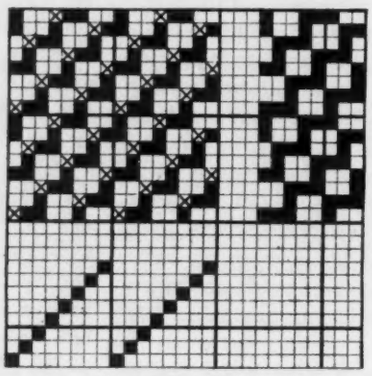


FIG. 22

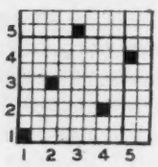


FIG. 23

plete. There is perhaps an easier way of expressing this. We can say—raise the first end on the first pick; then add the counter to the first end to see what end is raised on the second pick; continue to add the counter to the last end raised to see which end is raised on the next pick; when the number of the end to be raised exceeds the number of harness in the satin, subtract the number of harness in the satin from the number of the end and use the number remaining to show which end is to be raised on that pick and continue as before.

Sound pretty complicated? It's really not so bad. Look at Fig. 13 again and apply the rule: we raise the first end on the first pick; we add the counter and raise the fourth end on the next pick; we add the counter and get $4 + 3 = 7 - 5 = 2$ and raise the second end on the next pick; we add the counter and raise the fifth end on the next pick; we add the counter and get $5 + 3 = 8 - 5 = 3$ and raise the third end on the next pick. This is one repeat of the weave.

Two repeats each of warp and filling are shown in Fig. 13, and you will note that no raisers touch each other. Now for a few general observations about satin weaves. A satin always repeats on the same number of ends and picks as the number of harness required to make it. In a filling satin there is one raiser and one raiser only on each end and on each pick in one repeat of the weave. We refer to *warp* satins and to *filling* satins depending on whether there is more warp of more filling on the face of the fabric. If there are more raisers than sinkers it is a warp satin, and vice versa. Remembering the above information, it is easily possible to see how the other satin weaves shown are constructed. For your own satisfaction and education, construct satins on 9 and 10 harness. Prove the rule by trying to use counters which the rule says you can't use. The following designs are given for your convenience.

Fig. 13. 5-Harness Filling Satin. 3 as counter.
Fig. 14. 5-Harness Filling Satin. 2 as counter.
Fig. 15. 8-Harness Filling Satin. 3 as counter.
Fig. 16. 8-Harness Filling Satin 5 as counter.
Fig. 17. 5-Harness Warp Satin. 3 as counter.
Fig. 18. 5-Harness Warp Satin. 2 as counter.
Fig. 19. 8-Harness Warp Satin. 3 as counter.
Fig. 20. 8-Harness Warp Satin. 5 as counter.
Fig. 21. 6-Harness Filling Satin. Irregular, no counter.

In each figure two repeats each of warp and filling, drawing-in draught, and chain plan are shown. Fig. 9 shows a popular 6-harness satin. Our rule says that it cannot have a counter, and you will notice that the ends raise in irregular order. However, it fills the requirements of a perfect satin in that no raisers touch each other. See if you can construct another 6-harness satin weave.

The satin weave is used where it is desired to give great predominance to either the warp or filling threads. It is also used as a foundation for other weaves and in combinations, especially in the example of a satin weave border of a handkerchief with a plain ground.

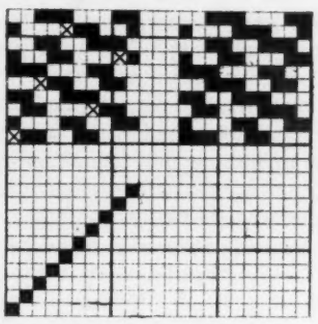


FIG. 24

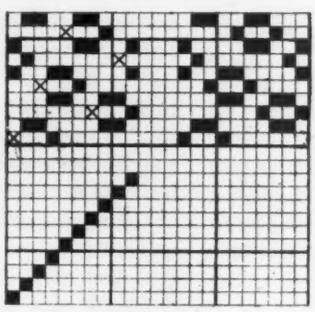


FIG. 24-A
ANOTHER WAY

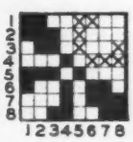


FIG. 25

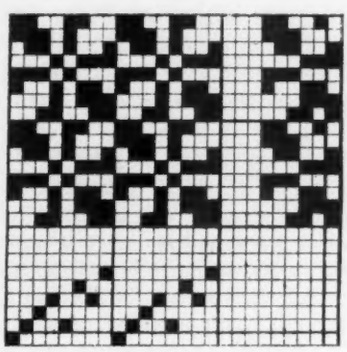


FIG. 26

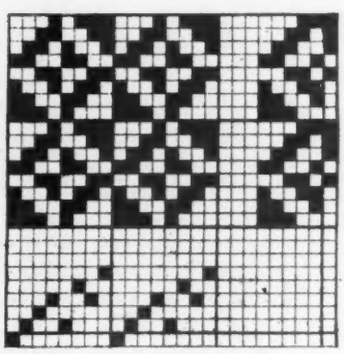


FIG. 27

Granites.

Granite weaves are very closely allied to the satins because one of the favorite methods of construction is from a satin base or motif. Unlike satins, however, granites usually have about equal amounts of warp and filling on the face. The patterns are neat and small, often rather indefinite in the cloth and are popular for such goods as men's shirtings and for any other purpose where an elaborate design is not wanted and where a plain weave would be too flat. There is no limit to the number of granite weaves which may be constructed, and much interest should be found by the young designer in originating new ones. There are three popular ways of proceeding, (1)

from satin bases, (2) by reversion or re-arrangement, (3) by random designing. The third method means simply experimenting by filling in squares until you have something which catches your fancy. We will discuss the other two methods briefly.

Granites from Satin Bases.

By this method we construct a filling satin weave on the design paper. After this we add raisers of our own choice to the original raisers of the satin weave, the only stipulation being that the raisers be added in the same relative position as the satin raisers. Fig. 22 shows Fig. 16 with the following additions: two raisers have been added below and one raiser has been added to the right of every raiser shown in Fig. 16. The original raisers are shown by crosses and the additional raisers by solid squares.

In order to get larger designs, the satin base is often painted on the odd ends and odd picks of the design paper, ignoring for the moment the even ends and even picks. This means that twice as many ends and picks per repeat and twice as many harness will be used.

Fig. 23 shows Fig. 1 painted on odd ends and odd picks. Fig. 24 shows the developed granite with the original satin raisers designated by crosses. Only one repeat is shown in Fig. 23 and Fig. 24. This method of granite construction will always give a weave suggesting a twill line on account of the line formed by the original raisers of the satin base.

Constructing Granites by Reversion and Re-arrangement.

Some very effective designs may be easily made by this method. It is very simple, and the resulting designs, though small, are usually very pleasing to the eye. The plan is as follows: Mark off on your design paper a square which represents the number of ends and picks you wish your design to repeat on (let us take 8 square, for example). Now divide this into 4 equal parts, which of course will each be 4 square. Then in one of the 4 square blocks paint a neat design (See Fig. 25). You will note that we have used the upper right hand corner for the foundation weave and have indicated it by crosses. Doesn't look like it would ever be a design, does it? Just keep your belt outside your shirt for a minute. Now we come to the reversing and re-arranging, which is very simple. Paint end four to make it just the reverse of end five; that is to say, put sinkers on the fourth end where we have raisers on the fifth end and vice versa. Then paint three opposite to six, two opposite to seven, and one opposite to eight. By the same token, paint the fifth pick opposite to the fourth pick and so on. Thus we reverse and re-arrange the weave. The resulting effect is shown by solid filled squares in Fig. 25. Fig. 26 shows two repeats, warp and filling, of the same weave. It usually takes at least this many repeats to get the full effect of the design and see what the whole fabric will appear like. Fig. 27 shows another granite produced by the same method. The foundation weave is again shown by crosses in this figure. In regard to the drawing-in drafts and chain plans for Figs. 26 and 27, permit us to say that they are made strictly by rule *but not the way a practical mill designer would make them.* We mention this because the discussion of a different draft would be confusing at this point. We will go into this practical method in a subsequent article. We would very gently suggest that the neophyte can find much pleasure and profit in constructing granites by the reversing and re-arranging method.

Third Annual Industrial Relations Conference Held in Atlanta.

Religious activities in industrial communities was the subject of the morning discussion of the Third Annual Industrial Relations Conference of the Cotton Manufacturers of Georgia, which was held December 12th at the Atlanta-Biltmore Hotel, Atlanta, Ga.

Dr. Comer T. Woodward, dean of men, Emory University, Atlanta, led the morning discussion, which was directed along the following lines: (1) What part should the mills and educational workers take in seeing that our communities are adequately supplied with churches? (2) What means might be suggested for improving leadership in church work, attendance and participation, as well as financial support? (3) How to avoid the division of effort that arises from multiplicity of sects and churches? (4) What is the greatest problem facing our religious work in textile communities, and what is the solution? (5) Is the religious interest in our textile communities (a) less than elsewhere, (b) greater, (c) or about the same? These questions along with others provided for a very interesting discussion during the morning session.

It was generally agreed that the amount of interest in textile communities was no less than in other communities, but that due to the fact that approximately 87 per cent of the southern textile workers come from the farms where they have formed the habit of attending church only once or twice a month, they are inclined to adopt the same practice after moving into the mill village.

Many present expressed themselves of being of the belief that it was possible for the mills to do too much for the employees along the lines of establishing churches and maintaining them. It was pointed out that if no responsibility were placed upon the employees, they could not possibly take the interest in their religious work that they would otherwise take.

The afternoon discussion, which was conducted by Miss Katharine Dozier, educational and welfare director, Pacolet Mfg. Co., New Holland, Ga., was devoted to social and recreational activities in industrial communities.

Recreation and social activity were first clearly defined, after which a thorough discussion as to the essentials of a successful recreational program, the development of leadership, the most popular physical activities, and other equally pertinent topics took place.

The last question to be discussed was so worded that an answer told whether or not results were really being attained. The question was, How can we tell when our social recreational program is successful? A lively discussion developed.

CURRENT TOPICS

Talk of the Month

STABILIZATION of prices, as we stated months ago, is not a matter of useless maintenance of a basis unjustified in the circumstances of reduced costs. Thus there has been recent criticism of the unsuccessful attempt of carpet mills to sustain an unreasonable level, as well as favorable comment on the readjustment finally to a sound basis from which to build up. The converse of this move has been found in the cotton-goods market.

Price Making Among the Mills

IT WILL BE RECALLED that in times of seasonal dullness the practice of cutting prices to stimulate orders is a fatuous one and non-productive of the results aimed at. Both raw material and goods had a promising movement in October, only to run into a snag in November. What did sellers do but fall back on the archaic and fruitless practice of going to buyers, who were in no mood to buy, with offers of goods at reduced prices?

For months it has been apparent that textiles are in a sound fundamental position and only awaiting a broad emergence from the general depression. In fact textiles have been expected to lead industrial progress. The improvement of conditions has been a matter of doubt, but its inevitability could not be doubted. The result of price-cutting, too, was inevitable; a renewal of caution and the withdrawal of buyers from the market. Even the early price cutters did business which they ultimately would secure at better prices, especially if the adjustment of mill operations fulfills the hopes of its proponents. So price-cutting when the industry already had adjusted itself to new conditions of costs deprived all manufacturers for the time being of the opportunity for sound business.

Distribution and Buying

AMONG THE IRONIES of the current depression is the existence in abundance of the real wealth that humanity wants, but through the weakness of human agency it is a drug on the market. The situation was set forth recently by Sam H. Thompson, president of the American Farm Bureau Federation, in the following terms:

"We are repeatedly told that the present economic distress is the result of over-production—over-production of farm produce, over-production of manufactured goods. Careful study indicates this statement is not supported by facts. I recognize that there is a very genuine market surplus—goods that cannot be sold with adequate return to producer. But in terms of human needs there is no surplus. In our great cities today there are hundreds of thousands of men and women walking the streets idle. Factory doors are dark and multitudes are hungry. There are today, too, millions of farm people in need of every product of these factories, and there are millions of dollars worth of farm products rotting in the ground because of no market for that produce. The fault cannot be explained by the word 'surplus'; on one hand millions needing and desiring food and the wherewithal to buy food—on the other hand millions desiring the product of the hungry workers of the city.

"The breakdown is in the distribution. Somewhere between the farm and the factory, between the factory and the farm the system fails to function and the result is the condition of today."

Whether the depression has been due to burdensome stocks of raw materials, or otherwise, the inescapable evidence is that the manufacturing world is vitally concerned in the agricultural problems of the day. The conditions of buying which have been developed in the textile industries during the past few years, because of excessive mill operation, may be remedied before long. But the modernization of mill methods suggests that the problem of marketing of raw cotton, or wool, will be accentuated.

Buyers of yarns, goods and clothing have learned to operate as close as possible to their needs and to their distribution. The buyers of raw material naturally have adjusted their operations to this condition. But in the very nature of things, the producers of raw materials like cotton and wool can never change from the condition of accumulating a year's supply at one time. Their only recourse is more orderly marketing.

Employment the Big Essential

ONE HEARS less of the formerly overworked word "efficiency" these days in business and more of "employment." Indeed the by-word it is so, for more workers mean of the day is employment. Well more consumers, who are the sole reason for production; likewise it is the basis of distribution and only as all factors as well as the manufacturer recognize the obligation, or the necessity, of doing whatever is possible to conserve and foster employment can we hope to realize the ultimate good in business generally. Therefore, it is time to give the utmost attention to efficiency in providing employment and less to reducing forces. It will continue to be the problem of employers as a united class, for only by employment is buying power existent.

In this connection, an emergency move but a step which might reasonably assume lasting character was the suggestion to the national advertisers in their fall convention at Washington. A representative of the President's Emergency Committee for Employment told the advertisers how they could co-operate, by using their influence upon public opinion in organizing their communities. He urged further that a clearing house be established for the exchange of information on plans to assist in developing "preventive" programs for the future.

We have had illustrations a-plenty of how reiteration of an idea leads to action. Only by this means has the plan for eliminating mill night work developed. Indeed, it is axiomatic that an idea always precedes an action. The advertising which so manifestly is a power behind distribution obviously can serve as a force for employment, by pointing and repeating the need. There is no end to the possible ramifications, moreover, of the clearing-house idea beyond the advertising field. We have already alluded to such a proposition in the efforts of certain industrial units to facilitate the necessary adjustments among workers due to change. Extension of the clearing-house plan in a national way and on a permanent basis is now suggested.

Other Exchanges of Information

THIS IS one phase of things which demonstrates the essential oneness of various economic activities. Textile manufacturers have been making progress with their fundamental problems of production, but every industry is inextricably linked with the whole round of economic developments, national and international. These developments, as is obvious to everybody, are dominant in the whole world's affairs. The relations of industry to the Government, to agriculture, to new methods of distribution, to the political-economic affairs of our own and other countries (notably Russia today) are all vital to the manufacturer.

Wide consideration of many industrial matters is being given careful attention by the United States Department of Commerce and the appointment of Robert M. Davis to make over and "humanize" as far as possible the week Survey of Current Business is a step forward in setting forth trends in business, employment, distribution and other directions. One of the first pronouncements by Mr. Davis, over the radio, indicates his attitude toward the work.

"It has long been an accepted fact that a man's judgment is limited very largely by the horizon of his own information," he says. This applies most forcibly in the business world. Not only must the business and industrial leader have precise and timely knowledge as to operations, methods, prices, costs and trends in his own immediate field, but he must keep close tab on the activities and trends in other industries and businesses, which directly or indirectly influence the activities in his own field of operation. In other words, the business man of today, in order to succeed, must 'keep abreast of business' in all its various phases if he expects to remain at the head of the parade."

International Considerations

HERE IS one form of clearing house for all industry and Mr. Davis offers concrete examples of how the individual producer in one field studies closely the latest data on building construction, automobile production and sales, railroad expansion and replacement, shipbuilding activity, agriculture in all its various phases, as well as the general economic condition of foreign countries as indicators of the future demand for his own line. The last consideration is not least by any means, in present circumstances, and the leaders well realize the fact.

For example, we have the recent suggestion from J. D. Mooney, president of the General Motors Export Company, that an international conference for devising ways and means of alleviating the world depression be called to avert what he deemed the growing danger of a new war. He was one of several speakers who discussed the problem of the economic recovery of Europe and its relation to this country. Only by promoting the forces of economic co-operation, he asserted, can the equilibrium of the world be restored.

Demoralization of raw materials prominent in international commerce, repeatedly stated in the newspapers and magazines, has been at the bottom of the long depression through which the world has been passing. The imperative demand for international co-operation in economic affairs has been demonstrated conclusively in the efforts for stabilization of copper, tin, rubber, sugar and other of these commodities of commerce. Business men of America are concerned in such co-operation even when, as in sugar, the problem deals largely with a foreign commodity.

Unemployment Insurance

AMONG THE problems of international character, one which has baffled Europe and is bearing down hard upon this country is unemployment insurance. There can be no digression from the policy of scientific management and the adoption of measures for the utilization of the best possible equipment and labor-saving devices. But rapid advancement of new methods in machinery cannot but cause some distress to individuals, except as labor is made more flexible and is protected over times of adjustment.

Certainly we do not want to drift into anything like the disastrous "dole" system of Europe. But there must be distribution of the exchange which means distribution of the actual wealth of the country in goods, either through the pay envelope when men are working through the dole when they are not working or through some means such as unemployment insurance. The endeavor to keep in employment everybody capable of working is the most humanitarian and calculated to promote the self respect of the individual.

This period of adversity has caused many leaders of business to face more than ever before the humanitarian considerations. Among those who see the way out through old-age pensions, unemployment insurance and co-operative programs by employees and employers is Gerard Swope, president of the General Electric Company, and he notes a wide change of attitude of others toward this idea now compared with five years ago. He advocates the matter as a joint responsibility of industry and society. Only by such means can the idea work without harm to the individual benefiting.

If properly devised, the unemployment-insurance plan should parallel for the individual the building up by the corporation of a reserve against the rainy day in business. It is recognized by the insurance leaders that the idea of corporations "insuring" wages as they do the shareholders' profits is not tenable. For in the one case the corporation holds back part of the earnings of the shareholder, but in the other it does not

do the same with wages.

The need is clear. A fundamental fact which is brought out in times of adversity is that a new generation of business has to be reckoned with over successive short periods. Leaders today are stressing the need of individual education on economic developments. John E. Edgerton, president of the National Association of Manufacturers, suggests straight thinking today on the basis that there may be greater chance of lessening the severity and shortening the duration of other depressions to come.

What the Southern Mills are Doing

AN EXPANSION PROGRAM which will be put on by the Anniston Mfg. Co., Anniston, Ala., will include the installing of 32 new spinning frames and additional looms. J. E. Sirrine & Company, of Greenville, S. C., are the engineers.

A combination skein and package dryer, manufactured by the Philadelphia Drying Machinery Co., is being installed at the Alabama Polytechnic Institute by the Carolina Specialty Company.

Acme Weaving Mills, Anniston, Ala., have started an expansion an dimprovement program that will result in 60 additional looms and other accessories being installed. The work will cost $80,000.

It has been announced that Strickland Cotton Mills, Valdosta, Ga., are planning enlarging their present quarters.

Cochran (Ga.) Cotton Mills Co. recently installed Breton Minerol Process equipment for oil spraying cotton in their mills. The equipment is of the latest high pressure type.

It was recently reported that Spencer Love had acquired the silk mill at Hemp, N. C., and that the output of the mill will be increased.

Cramerton Mills, Inc., Cramerton, N. C., have installed four new Sipp-Eastwood horizontal Swiss warpers.

Pinehurst Silk Mills, Hemp, N. C., manufacturers of gray goods, have announced that they will enlarge their plant.

The Linford Mills, Belmont, N. C., have had their oil spraying system revamped with new and improved high pressure units. This equipment was supplied by Borne Scrymser Co., of New York City. The new installation is of the hopper high pressure spraying type for fine yarn spinning.

J. G. Gilky has organized a new manufacturing plant in Marion, N. C. The products to be manufactured are blended weaves and Scotch fabrics for men's suits and topcoats and women's sports wear. Machinery has already been ordered and will be installed immediately upon arrival.

Rowan Cotton Mills, Salisbury, N. C., have recently purchased an Armstrong roll covering unit to handle Armstrong's seamless cork cots which are being installed there.

It has been reported that a number of mills in and near Greenville, S. C., are installing new equipment. Among these are: Judson Mill, Greenville installing 400 looms; Camperdown Mills, also of Greenville, replacing 130 looms with new machines; and the Monarch Mill at Lockhart, replacing a large part of its looms with new ones.

Gaffney Mfg. Co., Gaffney, S. C., in connection with developing and improving their product, stated that they had installed the latest method of oil spraying cotton. The equipment was furnished by Borne Scrymser Co., of New York.

Dunean Mills, Greenville, S. C., recently installed four additional double deck Sipp-Eastwood winders with the new oilless bearings.

American Spinning Co., of Greenville, S. C., have recently purchased an Armstrong roll covering unit to handle Armstrong's seamless cork cots, which are being installed.

It has been announced that four carloads of equipment from the Rockland Finishing Co., of Garnersville, N. Y., will be installed at once in the Southern Bleachery and Print Works, of Taylors, S. C., and other machinery will be installed later. A new office building is being built. The capacity of the plant will be doubled when expansion plans are completed.

The second unit of the mill of the Viscose Co. of America at Parkersburg, W. Va., is nearly complete, and they are planning early installation of machinery and equipment. This unit is about 80 per cent larger than the first and will give employment to a considerably increased number of operatives.

It has been reported that the Monarch Mills, of Union, S. C., have purchased 10 motors for the operation of pickers.

Tellico Cotton Mills Co., Tellico Plains, Tenn., have been improved and reconditioned and will operate on a full time production and schedule.

New England Mill Situation

December 18, 1930.

DISTURBED MARKETING conditions due to inventory taking and other year-end considerations have rendered conditions difficult for New England cotton mills during the past month, in common with the industry as a whole. Liquidation of some considerable stocks of goods has gone on at extremely low prices in some cases. Suggestions have been put forward to correct some of these difficulties, but theories have not in all cases led to action of immediate and effective nature. Meantime there have been a number of changes made to secure new capital for some enterprises, effect more economical operation, and better control production.

Night Work in New England.

General reports are to the effect that there is a considerable amount of night running still encountered in New England mill centers, even though many enterprises have endorsed the plan to eliminate nightwork and progress along such lines is claimed by the plan's sponsors. A certain amount persists, however, and its production is in a degree disturbing. However, corrective measures are being taken. There is a large concentration of production of staple fine goods in New England, built up as a result of mergers and co-operative action, which is working for the stabilization of this division of the industry. And in the matter of fancy goods, mills specializing on such lines are generally moderately well supplied with business to occupy them on a curtailed schedule, and disinterested in increasing their production except at a considerable price advantage.

Much discussion has been current concerning sales estimated at about 25,000 pieces in cotton voiles, makes of two mills recently purchased and closed down by the stabilization organization, at a very low price, and by some this has been attributed to the necessity of drastic steps being taken in order that disastrous competition and price cutting may be eliminated. There has been other trading on low price levels, and declines have been marked on both staple goods and some finer rayon types in the recent past. High sley Jacquard fabrics, a few combed fine yarn types, and novelties of a few types appear the only goods where a price advantage for near delivery exists and where mills are sold ahead to a fair extent.

Manville-Jenckes Company.

An outstanding development of the month has been the extension of new capital to the important Manville-Jenckes Company of Pawtucket, R. I., large cotton and rayon fabric weavers. The company entered into an agreement as of December 1 for discounting of its outstanding accounts by Commercial Factors Corporation of New York. The company employs several thousand normally in its plants at Manville, Pawtuckett, Georgiaville, and Woonsocket, R. I., and at Gastonia and High Shoals, N. C. It has sales offices in New York, Akron and San Francisco, tire fabrics being handled through the Akron office. It has also its own rayon plant. Dexter Stevens is president, Ernest L. Little treasurer, and former U. S. Senator Henry S. Lippitt of Rhode

Island is chairman of the board. The company was formed in 1923 by a merger of the Manville and Jenckes concerns.

More Merger News.

Acceptance of Jerome A. Newman's offers to acquire the Bristol Manufacturing Company of New Bedford and Flint Mills of Fall River has been announced. More than the required 8,666 shares of Flint mills for which Newman offered $46 per share was deposited in the specified time, and more than 6,666 shares of Bristol Manufacturing, for which $39 had been offered, were deposited. Flint mills officers have resigned, and a new board consisting of Douglass Newman, president; Jerome A. Newman, treasurer; Elias Reiss, M. M. Newman, and John T. Balmer has been elected. Excepting Balmer, all of the new board are also board members of Merchants Manufacturing Company, which the Newman interests also control.

A final dividend in liquidation of 1½ shares of General Cotton Corporation on each share of Lincoln Manufacturing Company stock has been made payable during the month. Lincoln and Davis Mills were both recently acquired by exchange of securities by General Cotton Corporation of Boston.

The Arkwright Corporation of Fall River, the Fall River plant of Homer Loring of United Merchants and Manufacturers, recently reported for year ended December 31, *1929*, a deficit of $135,214.

Individual Mill Reports.

Firestone Cotton Mill plants in New Bedford and Fall River have put 250 additional operatives to work in each plant, but with six-hour instead of eight-hour shifts employed. The mills are running night and day.

Border City Manufacturing Company has recently put on 300 added looms.

Wamsutta Mills, New Bedford, reported a loss of $55,082.20 before taxes and depreciation for the fiscal year ended September 30. Taxes were placed at $99,984.59 and depreciation was placed at $174,679.84, making gross losses $329,746.63. Charles F. Broughton characterized suggestions of liquidation as ridiculous, declaring the outlook better than it has been for two or three years, and calling particular attention to the stabilization program. Oliver Prescott declined re-election as president, and William R. West was chosen to take his place. Other officers were re-elected. Wamsutta recently began selling its own product.

An injunction to restrain Whitman Mills, its president, Charles L. Harding, and Harding, Tilton & Co., of Boston, from liquidating, was denied by Judge Louis S. Cox of the Massachusetts superior court. Whitman mills have recently shut down, and stocks of goods are being disposed of.

Kilburn Mills, New Bedford, has omitted its regular quarterly dividend of $1. For the year ended September 27, 1930, losses of $319,139 after depreciation of $100,000 was reported. A further dividend in liquidation of $4 per share making $44 since decision a year ago to liquidate was paid by Acushnet Mill Corporation. Stockholders were advised further dividends of about $6 might be expected. Officers and directors were reelected. Manufacturing loss of $297,199.15 was reported by Grinnell Manufacturing Co., of New Bedford. No depreciation has been allowed this or last year. Andrew G. Pierce is president, and officers and directors were re-elected. Suit of Walter H. Langshaw and Clifton W. Bartlett as stockholders to prevent the company from holding its annual meeting was dropped when the management allowed them access to the books of the corporation, and similar action in the Kilburn mill matter was dropped. The objecting stockholders held that if stockholders knew how assets were being depleted in the case of the Grinnell Company, they would wish to liquidate or change management.

Lewis L. Rieble of New York, silk underwear manufacturers, have leased space in the Pemberton mills group in Lawrence, Mass. Bast Fibres Inc., has been allowed a lease and option to buy the Silesia mill in North Chelmsford of the United States Worsted Company, Inc., for $41,000 under court approval. Plants of the Lancaster Mills in Clinton, Mass., are being auctioned, much of the machinery having been previously sold to the Amoskeag Manufacturing Company of Manchester, N. H. Authority to settle for $27,500 old suits of the Waltham Bleachery and Dye Works against the Boston Manufacturing Company has been asked of the courts by receivers of the latter. Two $500,000 suits were pending due to alleged breach of contract concerning water rights. Approval of their allowance of $1,175,704 of the claim of $1,213,276 made by Amory, Browne & Co., as selling agents is also urged. The receivers from appointment in April to November 29 have received $663,741 in cash and disbursed $77,239.

The machinery valued at $200,000 in the Lowel Bleachery plant of National Fabric and Finishing Company was auctioned for about $75,000, it was reported. National Fabric and Finishing reported for year ended September 30 losses of $560,385 net after interest, inventory adjustments, etc., against net loss of $348,586 the previous year. Its Lowell plant is being removed to St. Louis, the auction being of machinery not economically suited for use in the west.

United Piece Dye Works reported net profit after federal taxes of $1,911,164 against $1,933,029 last year. Preferred dividends this year will be $243,100 against $243,750 last year, leaving surplus for common of $1,668,064 against $1,689,270 a year ago.

Labor unions in New Hampshire are sponsoring a 48-hour law for women and minors, which will be presented at the next session of the New Hampshire legislature. Abolition of night work for women in industry is also sponsored by the union. The 48-hour law was unsuccessfully advocated by the unions last year.

A recent report states that the Amoskeag Manufacturing Company is employing 5,000 employes on full time and 2,500 more on part time. Frederick C. Dumaine, Jr., assistant treasurer, has been directing the manufacturing end for a time during absence of Henry E. Rauch, acting agent, in the south. Amoskeag reports successful merchandising of tickings in standard and fancy weaves in hotel, steamship, and similar work.

Cotton Comment

New Orleans, December 13th, 1930.

THE TREND of the cotton market except for temporary bulges, remained downward during the period under review, the lowest prices in 15 years having been reported today. Developments during the month, or since November 17th, were generally unfavorable. There were December tenders, further depreciation in commodity values, the depression in Wall Street, a further decline in silver to the lowest price on record, the depression in Egyptian, discouraging domestic and foreign trade reports, disappointing exports, spinners takings and consumption, and a slack demand for raw cotton in the South notwithstanding the low prices. Compared with about one month ago, Middling in New Orleans today is 9.20 versus 10.72, comparing with 16.98 this day last year, and is the lowest price since 1915.

The government's annual cotton crop estimate was smaller than generally expected, but failed to sustain the market owing to the large visible stocks and the unfavorable business and economic situation at home and abroad.

GOVERNMENT COTTON CROP REPORT

As of December 1st—	This year	Last year
Indicated crop, bales of 500 lbs., gross weight	14,243,000	14,828,000
Indicated yield per acre, lbs.	150.8	155.0
Acreage planted as of July 1st, est.	46,191,000	47,067,000
Acreage left to be harvested, est.	45,218,000	45,793,000

ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK NOVEMBER STATISTICS

Yards—	1930 4 weeks November	1930 5 weeks October	1929 5 weeks November
Production	206,623,000	228,866,000	345,146,000
Sales	183,067,000	335,801,000	222,911,000
Shipments	200,661,000	270,383,000	276,377,000
Stocks	356,861,000	350,889,000	431,426,000
Unfilled orders	333,251,000	350,845,000	342,232,000

November sales of domestic cotton goods was 88.6 per cent of production against 146.7 in October this year and 64.6 in November last year. Shipments 97.1 per cent of production against 118.1 in October this year and 80.0 in November last year. Stocks at the end of November increased 1.7 per cent against a decrease in October this year of 10.6 and an increase in November last year of 19.0. Unfilled orders at the end of November decreased 5.0 per cent against an increase in October this year of 22.9 and a decrease in November last year of 13.5.

BRITISH BOARD OF TRADE REPORT FOR NOVEMBER

Year—	1930	1929	1928
Exports of yarn, lbs.	11,000,000	12,000,000	15,000,000
Exports of cloth, yards	130,000,000	284,000,000	331,000,000

CENSUS REPORT

United States—Bales—	This season	Last season
Consumption lint, November	414,887	541,153
Consumption linters, November	54,777	63,214
Consumption, inc. linters, November	469,664	604,367
Consumption lint, 4 months	1,606,037	2,285,500
Consumption linters, 4 months	240,761	311,663
Consumption, inc. linters, 4 months	1,846,798	2,597,163
Mill stocks November 30th	1,566,854	1,655,071
Stocks in pub. stg. & whs. November 30th	8,397,800	5,812,658
Mill stock and stocks in pub. stg. & whs.	9,964,654	7,467,729
Active spindles during November	25,951,016	29,739,920
Active spindles during October	26,153,792	30,107,434

AVERAGE RAINFALL IN TEXAS IN NOVEMBER

Inches—Year	1930	1929	1928	Normal
November	2.68	3.10	2.62	2.34

Exports from the United States, including Canada, August 1st to December 12th, were 3,543,579 bales against 3,685,874 for corresponding period last season.

SPINNERS' TAKINGS OF AMERICAN COTTON, AUG. 1 to DEC. 12

Bales—	This season	Last season
North and Canada	634,000	970,000
South	2,092,000	2,588,000
Foreign spinners	2,383,000	2,816,000
Total mill takings	5,109,000	6,374,000

WORLD'S VISIBLE SUPPLY OF COTTON DECEMBER 12TH

Bales—	This year	Last year (Dec. 13)
American	8,480,751	6,349,828
Other kinds	1,901,000	1,937,000
All kinds	10,381,751	8,286,828

Spot sales at reporting southern markets for week ending December 12th were 109,412 bales against 181,014 for corresponding week last year.

As to principal foreign crops, in bales of 478 pounds, net, with the exception of Russia where the yield is estimated at 1,950,000 bales against 1,351,000 last year, and probably mainly for home consumption, the present outlook shows little change compared with one year ago. In Egypt the crop is estimated at 1,697,000 bales against 1,725,000; in Brazil slightly larger than last year's 550,000, and in China somewhat larger than last year's 1,752,000. The acreage planted in India to October 1st is estimated at 20,506,000 against 20,812,000 to same date last year. The first official estimate of the Indian crop will be issued about the middle of December.

While the present general business and economic conditions remain unfavorable, as is reflected by the depression in Wall Street, values of many commodities and securities have been made so low by the recent further decline that it is possible that prices are now about scraping bottom. Any improvement of consequence in prices for grain or cotton would likely be instrumental in giving stability to the security market, and such a development would probably stimulate trade and speculative demand; perhaps serve to restore confidence.

Another possible, if not probable development in store for the future is the outlook for a probable drastic reduction in the cotton acreage to be devoted to cotton in the South next spring. When prices were much higher in 1927 and in 1921 the cotton acreage in the South was reduced 14.0 per cent and 14.5 per cent respectively, and there is reason to believe that the acreage next spring because of the present comparatively very low prices and unfavorable credit situation, will likely result in an important reduction in the cotton acreage at planting time, to be followed, perhaps, by a smaller use of fertilizer.

It appears as if the foundation is being laid for the making of a smaller, perhaps much smaller crop next year, and probably for a slow but gradual improvement in trade nad speculative buying, as such conditions—cotton below the average cost of production, inventories of goods reported low, cheap money, and surplus labor—usually make for a betterment in trade and speculative activity, and generally in a rising market.

GEORGIA TECH ALUMNI CLUB FORMED AT OLD HICKORY.

A group of Alumni of the Georgia School of Technology, now located at Old Hickory, Tenn., met recently at a banquet and organized the Old Hickory Georgia Tech Club. Fourteen out of fifteen Tech Alumni at Old Hickory are connected with the Du Pont Rayon Company in various capacities. The following attended the organization banquet:

F. R. Anderson, T. E., '29; G. D. Baker, T. E., '27; Edgar R. Blount, T. E, '30; R. S. Broadhurst, Jr., T. E., '26; J. E. Dean, Jr., T. E., '26; L. J. Harris, Jr., T. E., '29; W. D. Hartford, T. E., '24; Ralph L. Heard, T. E., '30; James M. McCathern, T. E., '26; M. A. Steele, T. E., '29; and J. I. Warren, Co-op. '34.

All of the foregoing are connected with the Du Pont Rayon Company with the exception of J. E. Dean, Jr., who is associated with the Du Pont Cellophane Company. All of the members in attendance hold the degree of B. S. in T. E., except J. I. Warren who is still a student at Georgia Tech in the Co-operative Department.

PAYING BY CHECK.

The Thrift Mill of the Kendall Company, Paw Creek, N. C., is now paying its employees by check. Experience with the plan has extended only over a period of a few weeks, but Wilton Todd, Thrift manager, declares that not a single complaint has come from employees, which is taken as an indication of the acceptability of the plan since complaints usually come when an innovation is first started.

The employees cash the checks principally in the stores in the neighborhood. Some are taken to Charlotte and Mt. Holly, where many employees do their Saturday afternoon shopping, and thus far employees have had no difficulty whatever cashing the checks immediately.

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TELEPHONE COMPANY BOOKLET FOR TEXTILE INDUSTRY.

The American Telephone and Telegraph Company, through its Long Lines department, has recently issued an interesting booklet entitled, "Textiles — and the Telephone Typewriter." The booklet is devoted to a discussion of the uses of the telephone typewriter by textile organizations in co-ordinating production, sales and shipping. Specific instances, such as the United Merchants and Manufacturers Management Corporation, Cone Export and Commission Company, Collins and Aikman Company, and a number of commission houses, are given as typical instances of users of the telephone typewriter in conjunction with textile work.

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NEW COURSE AT N. C. S. C.

North Carolina State College Textile School has arranged a new course in decorative drawing and coloring to supplement the work in fabric designing. The course will consist of free-hand drawing, sketching and coloring of floral, geometric and modernistic effects, and is intended to serve as a foundation for the courses in Jacquard designing.

This is the third new course which has been added by the textile school this year. The others are color in woven design and manufacturing problems.

New Textile Equipment and Publications

ACROSS-THE-LINE MOTOR.

The Reliance Electric & Engineering Company, Cleveland, Ohio, have announced that the introduction of their new across-the-line type induction motor has made possible a considerable saving in first cost in the combined price of the motor and starter as compared with the standard induction motor using the ordinary starting compensator. They also state that there are fewer parts to inspect and renew, and that push button control affords greater convenience.

Another feature pointed out is that with the same current the starting torque of the across-the-line motor is greater than can be obtained with the ordinary induction motor using a starting compensator.

It is explained that mechanically the across-the-line motor is exactly the same as the standard induction motor.

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NEW ROTARY PUMP.

A new 104-page book of particular interest to the textile industry has just been published by the Geo. D. Roper Corporation at Rockford, Illinois. Rotary pumps for handling liquid dyes, for circulating hot and cold water, size, acids, etc., to and from the various processes in silk, cotton and woolen mills are fully illustrated and described.

The company states that the man who is not an expert in the pumping equipment line will find the book invaluable. Not only are different types illustrated, capacities given, and their different purposes explained, but in addition, the different uses of the various pumps are outlined. The rear of the book contains all the general information about pumps that any layman would need. There are instructions for installing pumps, common reasons in trouble in an installation, an outlined method of determining the power required for pumping, formulas for determining size and speed of pulleys and gears, definitions of terms used in referring to pumps, and the pump construction necessary for different types of liquids.

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LINK-BELT P. I. V. GEAR.

Link-Belt Co., Philadelphia, has just issued a new 16-page book descriptive of their recently announced P.I.V. Gear, an all-metal variable speed transmission.

This P.I.V. (Positive, Infinitely Variable) Gear is illustrated and fully described in this book, which alludes to its many applications in industry wherever a variation in conveyor or transmission speed is desired, the company states.

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NEW BOOKLETS.

The Durene Association of America, 250 Fifth Ave., New York, recently issued two very interesting little booklets, one entitled "How Durene Yarns Are Made" and the other "Durene Will Increase Your Sales and Profits."

In the first-named booklet technical details are given in lay language and included are four microscopic photographs showing cotton fibers before durenization with their excessive "twist"; the same fibers following durenization with elimination of excess twist; cotton yarn before gassing and durene mercerization; and the same yarn following the durene process when a remarkable smoothness and softness of luster has been achieved.

The latter booklet, "Durene Will Increase Your Sales and Profits," is directed to the knitting industry, and shows durene's quality standard of production to be a means for new sales stimulus in this field.

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NEW MONARCH TWISTER.

The Atwood Machine Co., Stonington, Conn., builders of silk and rayon throwing machinery, have recently announced the introduction of a new twister known as the "Monarch." The company states that this new twister possesses the following features:

Maximum number of spindles per square foot of floor space; single vertical high speed motor drive; belts are replaced endless; simplest possible twist gear construction; a novel feature—the belt take up pulley is also the drive for the twist take-up rolls, this whole feature being unit assembled in Atwood shops; improved cam construction, providing better wound bobbins; grease protection at every danger point, insuring clean silk; Atwood ball top" spindles mounted in Atwood patented steps.

These machines are made in both single and double deck models, the company states.

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SMALL POWER MOTORS.

The Westinghouse Electric and Manufacturing Company, East Springfield, Mass., has recently issued a new 16-page publication, designated as Circular 1883 covering the various types of Westinghouse small power motors.

In addition to the text describing the motors, the company adds that the booklet contains many illustrations showing construction details of the motors, their external appearance, and some of their many applications.

Another feature pointed out for the publication is a description of the Sentinel Breaker, a compact starting switch that provides overload protection for fractional horsepower motors.

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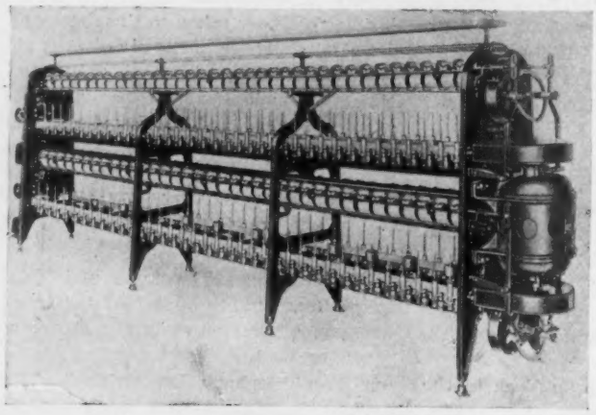
MANUAL STARTER WITH PUSH BUTTON RESET.

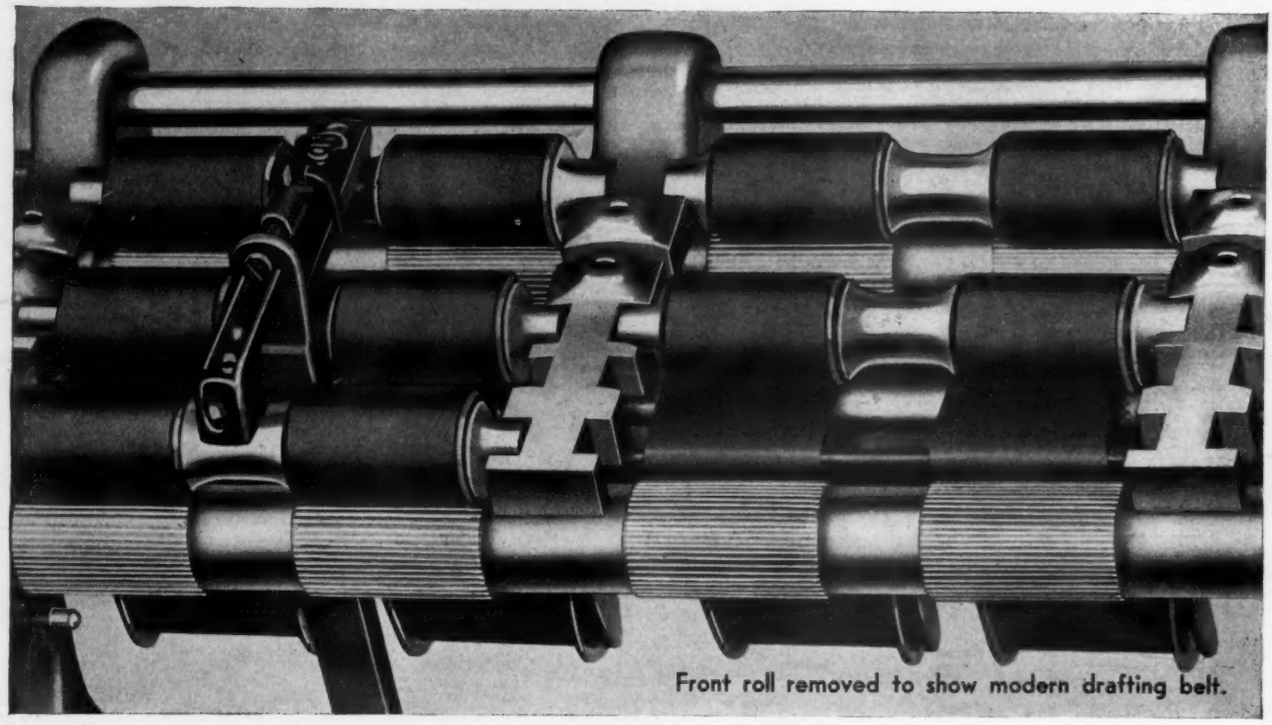
One of the features of the new Class 2510 Manual Starter recently introduced by the Industrial-Controller Division Square D Company, Milwaukee, Wis., is that all poles are simultaneously opened with the tripping of either of the two relays, the Square D Company states.

It is stated that the thermal overload relay used in this new starter is the same reliable type which is being used in the industrial controller line of automatic starters. Because this relay is incorporated in the design of the new starter, it is pointed out, protection is assured for the motor against



<> The New "Monarch" Twister. <>

SACO-LOWELL-ROTH LONG DRAFT SPINNING



Front roll removed to show modern drafting belt.

SACO-LOWELL FRAME . . . Wins another Booster for Long Draft

THE accompanying figures from a unit of Saco-Lowell Long Draft Spinning were supplied by the executives of a prominent Southern mill. The increased breaking strength of the yarn is merely an obvious advantage of having this better draft spinning. The mill executives stated that in every test they had made, the yarn from the Long Draft frames was much more uniform in both weight and break than the yarn from their regular Spinning. The difference could be easily seen on the frames themselves.

	REGULAR	LONG DRAFT
Yarn	30 s warp	30 s warp
R.P.M. Front roll	117	128
Roving in Creel	6.00	3.50
Draft	10	19
Skein Break	54	59
Bobbin	5/8" diam.	5/8" diam.
Traverse	8"	8"
Cotton	1" local, middling and strict middling	1" local, middling and strict middling

NOTE: That such performance is not exceptional is evidenced by a more recent report wherein a mill spinning 30 s yarn with a draft of 19 obtained a break of 65 against a break of 57 on ordinary spinning.

There are other very important advantages in using modern spinning that yield major savings in producing finished yarn and finished fabric.

Our engineers will gladly report what savings can be made in your mill.

SACO-LOWELL

MANUFACTURERS OF TEXTILE MACHINERY

147 MILK STREET, BOSTON, MASS.

CHARLOTTE, N. C. SPARTANBURG, S. C. ATLANTA, GA.

excessive current, whether due to operating conditions or single phasing of the line.

Another feature for this new starter is its trip-free handle which prevents blocking of the switch closed against an overload and as the starter is operated entirely from the front it may be mounted in pairs or groups on pedestal or wall without waste space, according to the company.

The three phase ratings of this starter are 5 H.P., 220 volts and 7½ H.P., 440-450 volts. It is suitable for looms, pumps, portable conveyors, fans and any application where low voltage protection is not required, the company states.

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NEW DYES.

Newport Chemical Works, Inc., Pas saic, New Jersey, have announced the placing on the market of two new dyestuffs, the trade names being: Newport Light Fast Violet SR Conc.; and Newport Diazo Fast Blue NBB. A full description of these dyes and their properties is given in bulletins Nos. 208 and 162.

The company has also placed Neopen SS on the market. This is used as an assistant for printing pastes, as well as a wetting out agent for all types of textiles. The company states that its dispersion properties make it of particular interest as an aid to the preparation of vat color powders for dyeing. It is described in Bulletin NP 19.

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A NEW MACHINE AND A NEW METHOD.

Van Vlaanderen Machine Company, Paterson, N. J., recently issued a pamphlet entitled, "Not Only a New Machine But Also a New Method of Warping Rayon and Other Yarns," in which they give a very thorough description of their new machine and method. Anyone desiring this pamphlet may obtain one by writing the company.

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PYROGENE PURE BLUE 2RL.

The Society of Chemical Industry in Basel recently announced that they had brought a new sulphur color on the market, which is noted for its bright blue shade with reddish tinge. This color, Pyrogene Pure Blue 2RL, belongs to the same sulphur blue group as Pyrogene Pure Blue 3 GL and Pyrogene Indigo GW, which is reduced with sodium sulphide, which shows no tendency for bronzy dyeings. Color card No. 747 entitled "Pyrogene Pure Blue Types" shows these sulphur colors in cotton piece yarn and explains the most suitable dyeing methods and properties.

Ciba Co., Inc., Cedar and Washington Street, New York City, is the representative of the society in this country.

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NEW CATALOG ON GEARS.

Charles Bond Company, 617 Arch St., Philadelphia, recently issued Catalog No. 56, which gives a detailed description of the Bond stock of gears. Besides giving much helpful information in regard to the gears, the catalog gives instructions for ordering which will enable the buyer to send in orders that are certain to be properly interpreted.

The company announces that they will be glad to send a copy of this catalog to anyone making the request of them.

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PONTACYL FAST BLUE 1B AND PONTAMINE DIAZO GREEN 3G.

E. I. Du Pont De Nemours & Co., Inc., Wilmington, Delaware, have placed two new dyestuffs on the market. They are Pontacyl Fast Blue 1B and Pontamine Diazo Green 3G. The first named is an acid color and is described in Bulletin E. 447, while the second is a developed color and has its properties given in Bulletin E. 448.

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WHAT TYPE HEDDLE?

Three very interesting little pamphlets entitled What Type Heddle for Plush and Velvet?, What Type Heddle for Silk, Rayon and Cotton? and What Type Heddle for Woolen and Worsted?, were recently published by the Steel Heddle Mfg. Co., 2100 W. Allegheny Ave., Philadelphia, Pa.

The pamphlets, by means of illustrations and data, show why certain styles of heddles are better suited for one particular line of work.

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NEW CATALOG ON CONTROLLER VALVES.

The Bristol Company, Waterbury, Conn., are now issuing to those requesting it, Catalog No. 2002 which features Bristol's automatic controller valves motor operated types. The company states that special attention is called to the latest developments in Type BK for steam, water, air and gas in the book.

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NEW OILING MECHANISM.

It was recently stated that W. C. McGee, of Gastonia, N. C., had received a patent on a device for oiling spinning frame rolls. The mechanism consists of an adjustable plate adapted to be mounted over the roll stands of spinning frames, and in this plate are a plurality of vertically disposed tubular members having a wooden plug in the lower end which is adapted to engage the journals of the rolls. Oil is placed in these tubular members and gradually soaks through the wooden blocks to lubricate the journals in the roll stands.

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THE WALTHAM PICK COUNTERS.

Waltham Watch Company, Waltham, Mass., manufacturers of the famous Waltham Watch, are manufacturing and marketing the Waltham Pick Counter, which, it is pointed out, was developed to meet a demand for accurate computation of loom production. It is stated that these pick counters are readily attached to any standard type of loom. They are made in the double shift type, with a dial for day production and one for night production, which may be used independently as a separate check-up on each group of operators. The company points out that the counter is sturdily built and possesses the necessary construction features to enable it to withstand the stress of severe vibration. The announcement states that more than 5,000 of these pick counters are in daily operation in one New England mill.

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LEONARD REPRESENTS HARTMANN MACHINE WORKS.

Hartmann Textile Machine Works, Chemnitz, Germany, have announced the opening of a New York sales office at 475 Fifth Avenue. H. H. Leonard has been appointed sole agent for the United States and Canada. Hartmann Textile Machine Works are manufacturers of woolen cards and woolen spinning mules, looms, worsted spinning and drawing frames, long draft spinning system, rayon machinery, twisters, etc. They have discontinued the manufacture of other industrial equipment, concentrating all of their textile machinery departments under the title of Saechsische Maschinenfabrik vorm. Rich. Hartmann A. G.

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GUARANTEES AGAINST PRICE REDUCTIONS.

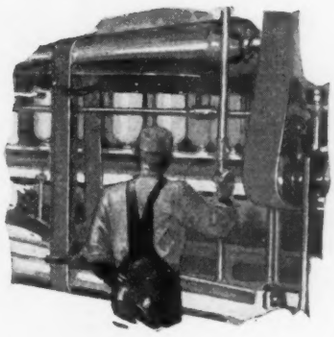
For the purpose of eliminating all uncertainty in the rayon yarn industry and enable manufacturers to stimulate production and assure customers against a reduction in yarn prices, the Tubize Chatillon Corporation recently announced that it will guarantee all customers against any reduction in yarn prices for a period of sixty days.

The action on the part of the company is in line with the opinion recently expressed by them that they felt the need of some sort of price protection agreement between producers and their customers.

This new Goodyear Belt

keeps frames running

The Goodyear Thor Belt*—seamless, a new construction for 1931—represents a radical improvement in belting for textile machinery. On Roving Frames, Draw Frames, Spinning Frames, Looms, Spoolers, Twisters—practically any place in the mill—it will save costs and trouble. The edges are protected by a splitless and seamless envelope. The belt is guarded from fraying at the edges with constant shifting—and from tearing at the center. It is very strong at the fasteners—a rugged new Goodyear belt to keep your machinery going at top efficiency.



Goodyear Thor Belting*, seamless, as well as the well-known Goodyear Compass (CORD) Textile endless belts and Goodyear Emerald Cord Multiple "V" Belting are applied to work by the G.T.M.—Goodyear Technical Man. He saves time and money. He fits belting and all other Goodyear Mechanical Rubber Goods—Hose, Molded Goods, and Packing—to the needs of your own production and machinery. He is an expert in belting practice. See the G.T.M. to keep costs down—just write to Goodyear, Akron, Ohio, or Los Angeles, California.

**Goodyear Thor Belting, seamless is made in widths up to and including 16" — Thor quality of special construction is available for larger sizes.*

THE GREATEST NAME IN RUBBER

GOODYEAR

BELTS • MOLDED GOODS • HOSE • PACKING

NEWS ITEMS *with a Textile Slant*

CHANGES IN EXECUTIVE LINEUP.

Important changes in the executive lineup of the mechanical goods department of the Goodyear Tire & Rubber Company have been announced. They are:

W. C. Winings, assistant manager of the department, has been promoted to the managership, succeeding D. R. Burr, who becomes consulting manager on mechanical goods sales. G. A. Grauer continues as assistant manager of the department, working closely with Winings in handling the executive duties and operating functions of the department.

W. C. Winings.

Mr. Winings joined the Goodyear organization fourteen years ago as a general line salesman at Indianapolis. Later he was transferred to the Chicago branch as mechanical goods salesman. In 1926 he was promoted to the post of manager of the Indianapolis branch. Two years later he was selected as one of the two assistant managers of the mechanical goods department at Akron.

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INTEREST IN TEXTILE TRENDS.

Miss Grace Walton, educational lecturer of the Durene Association, reports that the great woman consumer audience which influences an 85 to 90 per cent retail purchasing power in this country looks for "shopping drama in minute degrees today." By this, Miss Walton explained, she meant that a woman shopping for the masculine members of her family remembers today what she has read and heard of textile developments, and does not see in so undramatic a piece of merchandise as an undershirt, simply a garment following the customary lines of extreme simplicity.

"Women like the availability of a terse and guaranteeing term such as durene," she said. "They realize that an industry could not afford to set up a standard, label it, advertise it, and otherwise promote it, if it were not an actual and trustworthy guarantee of dependable quality."

THE GROWTH OF AN ORGANIZATION.

A very interesting pamphlet has been issued by Link-Belt Company that tells of the growth of Link-Belt service to industry. The pamphlet very interestingly tells of the growth of the company during the sixty years that the organization has been serving industry It is presented in a very attractive manner.

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"THE MENACE OF OVER PRODUCTION."

This is the title of a book which has just been published by John Wiley & Sons, Incorporated, 440 Fourth Avenue, New York City.

It represents a symposium, prepared by Scoville Hamlin, based largely upon the influence of the machine age and other influences as factors in causing an over production in industry. In it, eighteen prominent business men, each representing an important industry, has discussed the particular problems relating to his own industry and made recommendations as to how these problems may be solved. Of particular interest to textile manufacturers are discussions of the cotton textile industry, by Henry P. Kendall, President the Kendall Company; a discussion of the woolen industry by A. D. Whiteside, President the Wool Institute Incorporated, a discussion of the silk industry, by Thomas B. Hill, President the Silk Association of America Incorporated, and "The Rayon Industry" by John E. Bassill, Vice-President, Tubize-Chatillon Corporation. The price of the book is $2.75 per copy, and copies may be secured direct from the publishers, or through COTTON'S book department.

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ELEGANT BATHROOM EQUIPMENT.

In keeping with the trend toward more elegant bathroom equipment, the Fabric Development Service of the Du Pont Rayon Company, in co-operation with the Para Manufacturing Company, has brought out two new types of shower curtains in aquatic designs in rayon fabrics that are especially processed and made water-repellent, the Du Pont Company states. They add that tests have shown that they will not mildew and may be laundered without losing any of their water-repellent qualities.

"THE COTTON TEXTILE INDUSTRY OF FAR EASTERN COUNTRIES."

Pepperell Manufacturing Company, with executive offices at 160 State Street, Boston, Mass., have recently published and are distributing an interesting book entitled "The Cotton Textile Industry of Far Eastern Countries."

The book is very complete, in covering the general conditions and textile manufacturing industry of Japan, China, and India. Plentiful illustrations are used of various phases of the industry in these countries. Exhaustive statistical information pertaining to mill equipments, etc., in these countries is included. The volume gives a clear and complete picture of the textile industry in the far East. It was prepared for Pepperell by C. K. Moser, Chief of the Far Eastern Section of the Bureau of Foreign and Domestic Commerce, Department of Commerce, following a trip which he made into these countries for the Pepperell Manufacturing Company.

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GENFIRE STEEL COMPANY MERGES WITH TRUSCON STEEL CO.

The Genfire Steel Company has been incorporated with the Truscon Steel Company, and will function as its dealer and commodity division under the direction of W. B. Turner, formerly manager of the Genfire Steel Company. The sales organization of the Genfire Steel Co. is being kept intact and merged with the Truscon sales organization to function in this specialized capacity.

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GIANT SKEIN DEVELOPED.

Intensive research work during the past year by technicians of the American Bemberg Corporation has resulted in the development and perfection of a 30,000 meter giant skein, it is announced by E. C. Morse, manager, cooperative merchandising department.

A number of manufacturers who have been using the new skein for the past three months report complete satisfaction, with decided savings in production costs as a result of the decreased cost in handling and preparation which the new skein makes possible in knitting and weaving, the company states. The company also announces that the giant skein reduces both the number of skeins and knots from four to one, and is being manufactured in all deniers. It weighs 8 ounces in 65. denier yarn as against 2 ounces in the standard skein.

COSTS CUT

BY USING H&B REPLACEMENT PARTS!

WE strongly urge that you use only H & B Replacement Parts in reconditioning your H & B Equipment. They promise lowest ultimate cost, reduce necessity for frequent repairs and keep equipment functioning at highest efficiency.

No round-the-corner shop or jack-of-all-trades can duplicate H & B parts. Our modern equipment, automatic machines, metallurgical specifications and standards of accuracy assure fit and continued trouble-free operation. When ALL costs are accurately figured, you will find H & B parts cheapest and best.

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NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

C. Chester Bassett, Jr., well known in the textile industry, with which he has been identified for the past eleven years, has joined the American Bemberg Corporation in a sales capacity. He was formerly connected with the Viscose Company, where for a number of years he was in charge of sales, advertising and promotion work.

Walter R. Emig, who for the past four years has been factory manager of the Toledo Scale Company, was recently made vice-president of the company. Mr. Emig is a young man, although he has been associated with the Toledo Scale Company for more than 23 years.

J. E. McCarvey has resigned his position as overseer of weaving at Cochran Cotton Mills, Cochran, Ga., to accept a similar position at the Saratoga Victory Mills, Inc., Albertville, Ala.

R. T. Osteen has been appointed southern representative for Walker Mfg. Co., Inc., Philadelphia, manufacturers of steel heddles, heddle frames and reeds. Mr. Osteen will have headquarters at Greenville, S. C.

Frank W. Wakefield has been appointed general manager of the U S Bobbin & Shuttle Company. He was formerly connected with the company as their comptroller and secretary.

Henry C. Cole, formerly production superintendent of the Felters Co., Millbury, Mass., has accepted a position in a Burlington, Vt., mill.

G. G. Busy, formerly of Pelham, Ga., is now overseer of the cloth room of the Moultrie (Ga.) Cotton Mills.

Carl P. Park has been promoted to to the office of general works manager in charge of manufacturing of the U S Bobbin & Shuttle Company. Mr. Park has been associated with the company for a long time and for the past year has been chief engineer in charge of the company's engineering and research department.

C. L. Leopard, formerly head of the weaving department of the Arkwright Mills, Spartanburg, S. C., is now connected with the Hermitage Cotton Mills, Camden, S. C.

R. J. Mebane, of Durham, N. C., has been made representative of American Enka Corp., in North Carolina, South Carolina and Eastern Tennessee. He will begin his new duties immediately.

J. A. Melvin is now overseer of the weaving department of the Jennings Cotton Mills, Inc., Lumberton, N. C.

Lawrence Brumby, superintendent of Bibb Mfg. Co., Porterdale, Ga., is now at Macon, Ga., where he has entered upon similar work in the offices of that company, assisting W. A. Woodruff, general superintendent.

Vance McKenney has become superintendent of the Asheville Knitting Mills, Asheville, N. C.

C. C. Robbins, Jr., is now superintendent of the Robbins Knitting Company, High Point, N. C.

Roy Riggs has been made superintendent of the Cannon Mills, No. 10, Concord, N. C.

Charles Fralick, who until recently has been connected with the Oak Mfg. Co., East Point, Ga., is now in charge of carding for the Peerless Woolen Mills, Rossville, Ga.

H. T. Gaddy, formerly of Moultrie, Ga., is now second hand in the picking department of the Griffin (Ga.) Mills.

R. L. Maroney is now overseer of the spinning department of the Morgan Cotton Mills, Quitman, Ga. He was formerly at Shelbyville, Tenn.

J. H. Clark, of Fitzgerald, Ga., has become overseer of weaving at the Cochran Cotton Mills, Cochran, Ga.

R. V. Hayes, formerly overseer of spinning at the Mercury Mills, North Charlotte, N. C., has become second hand in spinning at the Chadwick-Hoskins Mills No. 4, Charlotte.

P. C. Gillispie recently became associated with the Adams-Swirles Cotton Mills, Macon, Ga., as overseer of weaving. He was up until the time of his change connected with the Consolidated Textile Corporation, Pelham, Ga.

A. P. Edwards has joined the Durham Hosiery Mills as Pacific coast representative. Mr. Edwards has covered this territory for the past 15 years. He was formerly with Steele & Williams, Inc.

W. S. Moore, superintendent of the Grier Cotton Mills, Inc., North Wilkesboro, N. C., was one of the leading speakers at a banquet given at North Wilkesboro recently for the 110 employees of the mill, along with the officials of the mills and guests.

S. F. Covington has been made overseer of the cloth room at the Jennings Cotton Mills, Inc., Lumberton, N. C.

Albert Powers, formerly of Laurens, S. C., is now overseer of the cloth room at the Griffin (Ga.) Mills.

Troy Sherrill has been promoted from overseer to night superintendent of the towel mills of Cannon Mills, Inc., Kannapolis, N. C. He succeeds **Joe Walton**, who has been placed on the day shift as overseer.

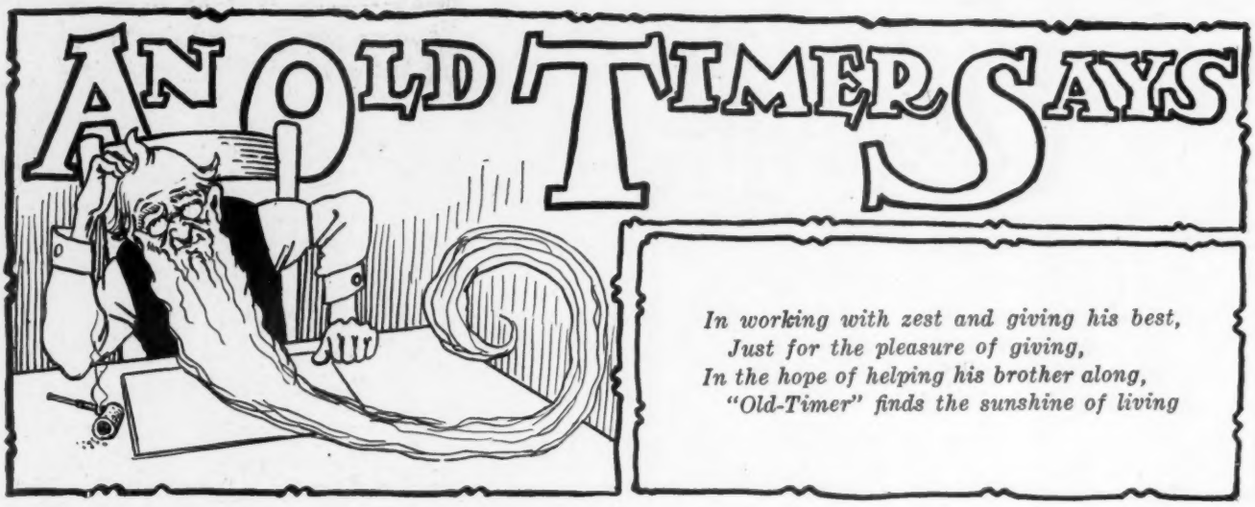
C. M. Woolfolk, formerly with the Grasselli Chemical Co., has joined the sales force of A. Klipstein & Co., under the direction of Paul Haddock, southern manager, with headquarters at Charlotte, N. C.

Carl Epps recently resigned as superintendent of the Champion Knitting Mills, Chattanooga, Tenn., to accept a position in the technical department of Tubize Chatillon Corp., Rome, Ga.

C. H. Lockman has resigned as superintendent of the Henrietta Mills, Caroleen, N. C., to take charge of the weaving departments of the 10 mills of the Alabama Mills Co., of Alabama.

J. B. Parker is now associated with the Moultrie (Ga.) Cotton Mills. He was formerly with the Bibb Mfg. Co., Macon, Ga.

B. J. Dobbins has become connected with the Kali Manufacturing Company, of Philadelphia, representing this company in the sales of their products in Georgia, Tennessee, and Alabama, and other states in the territory. Until recently, Mr. Dobbins was superintendent of the National plant of the Standard-Coosa-Thatcher Co., at Rossville, Ga., having previously held other manufacturing positions in the industry.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living

Some Random Thoughts

DON'T FORGET, Mr. Overseer and Mr. Superintendent, there's a time coming when help will not be so plentiful. Don't let your methods of management get into such a condition that you will be compelled to change them when that time comes. That is one of the things which will cause help to lose confidence in you. Treat them *now* like you will treat them when *they know* you want them and they will be loyal.

* * *

THE MAN who spends all he makes is like a dog chasing his tail; he never gets anywhere.

* * *

DID YOU ever see a real intelligent overseer or superintendent who was all the time bragging on himself?

Remember brother, you are not fooling anybody when you are bragging.

* * *

THE MAN with a grouch hurts himself more than anyone else.

* * *

A HIGH TYPE overseer or superintendent stimulates his men to do their best.

What do you mean "high type?"

A man who is square in his dealings—a man who shows no favoritism—a man who gives a civil answer—a man who can put himself in the other fellow's place and get his viewpoint—a man who realizes the employee is a human being and should be treated as such—a man who does not make promises.

* * *

LOYALTY and cooperation usually help the pay envelope.

This statement of fact is not made, as probably you supposed, to the employee, but to the overseer.

Hold your horses, now, before you say OLD-TIMER has got his nerve to accuse overseers and superintendents of disloyalty—well, I didn't; I just made a statement of fact to overseers and superintendents.

If it doesn't hit you then you have no kick coming. Now does it, or not?

Suppose you start out on the job tomorrow, and for the next thirty days everything you do, ask yourself the question: Did my actions show loyalty? Was what I did co-operating, the same as if this machinery, etc., belonged to me?

How about the last order for supplies you signed? If you were reaching down into your jeans to pay for those supplies would you have looked into that order more closely or not? Honest, now!

You know it doesn't matter a darn to me, whether you are co-operating like you should or not, but it matters a *lot* to *you*, brother!

* * *

IT SEEMS to be a trait of human nature with the vast majority of us to want to criticize the actions of our fellow workers.

If the overseer of carding is running his job so well that the boss is complimenting him, it seems just natural for the overseers of spinning and weaving to say, "Oh yes, he has everything in his favor at present; he is having a streak of good luck," etc., etc.

You know what I mean, fellows. You probably can remember a certain time when you made a few remarks about someone's success that you knew at the time you were not justified in making.

Can you explain why we have that little mean streak in us? If it is jealousy, why should we be jealous of another man's success? Well, it is just plain meanness, so the next time you have the opportunity, give your brother overseer a boost, instead of a knock, and see how good *you* feel over it.

Say, you know why that overseer never sees his opportunity? He's too darn busy knocking.

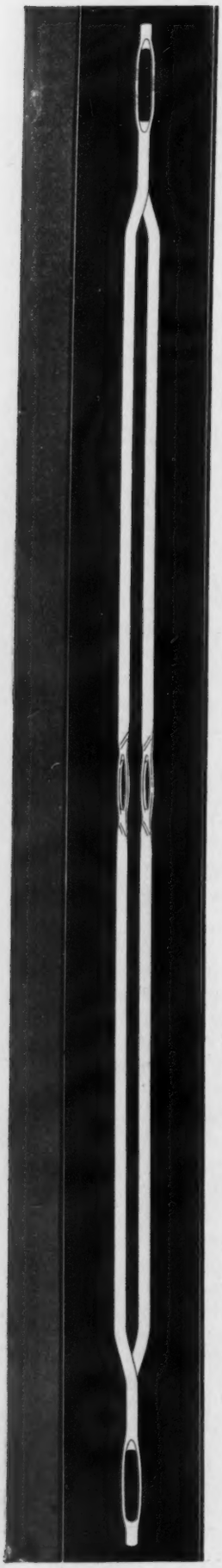
* * *

GOSH! what a satisfaction it is to see that bank account grow.

Ever try it?

* * *

A RUNNER who beats his last record has got to work harder than he did before. He has to put forth more physical effort. But the overseer or superintendent who wants to beat last month's record has only to put forth more intelligence.



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requires special heddles designed and shaped to suit the characteristics of the fabric.

The Flat Steel Duplex Heddle permits maximum count—50% more than heretofore obtained with the ordinary heddle on the same width frame.

The Scientific Crimping

The exclusive and scientifically designed crimping of the top heddle rod slot keeps the heddle from turning on the rod—holding it in absolutely true position for best results.

The Special Center Eye

with its super polish permits this heddle to give unequalled results—both as to quality and quantity of production. This eye will not jag, chafe, or break the threads.

An ideal heddle for Sheetings, Denims and all close-siey cotton fabrics.

Made in rust-proof and nickel finish.

Send for sample of this heddle and you can study at first hand the advantages we claim for it.

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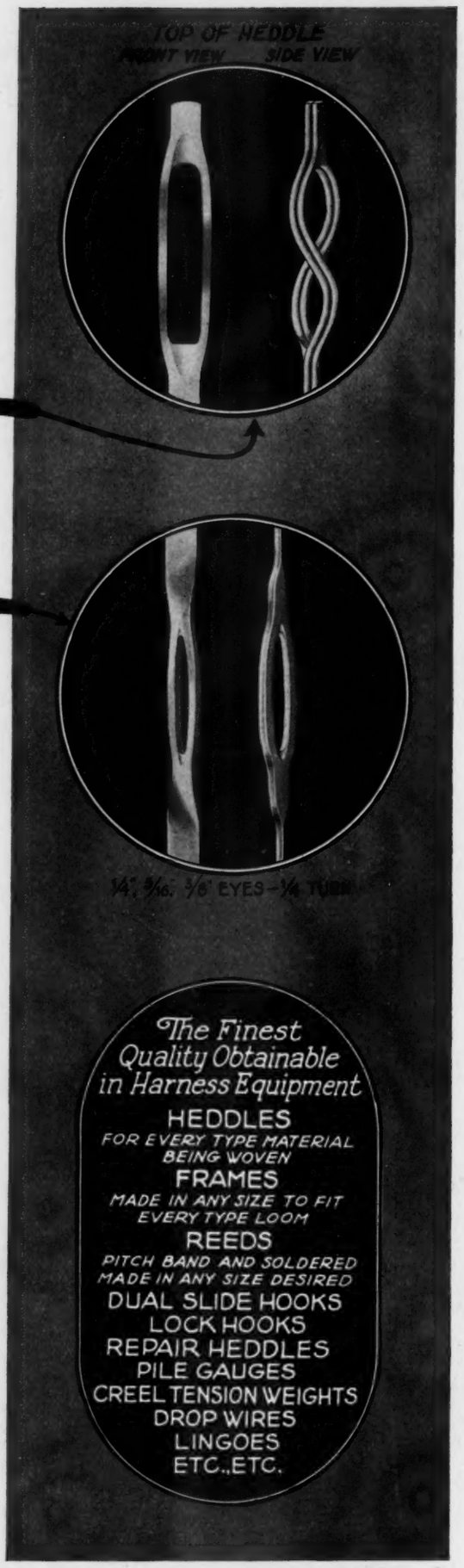

DID YOU ever see a mule *pull* while he was *kicking?* Get the idea?

* * *

SOME OVERSEERS and superintendents are too darn busy to run their jobs. A rather queer statement I'll admit, but suppose you think it over.

* * *

THE AVERAGE OVERSEER knows who his best section men are. Well, now, what are you doing to improve the less efficient ones? Have you talked the matter over with them?

Have you tried to encourage them to come up to the standard of your best men?

Have you made any effort to find out just why their supply bill is more than the others?

Have you given those inefficient men the benefit of *your* knowledge to help them bring up their production?

* * *

WHAT DO YOU get pay for anyway? Suppose you take a piece of paper and write down just the things you consider you are getting pay for. Now go over each item and see if you are honestly doing those things.

* * *

YES, I realize you *know* you can run your superior's job better than he is running it, poor fellow, but suppose his job becomes vacant tomorrow, will *you* get it?

What are you doing to improve yourself mentally?

If you know all about the machinery and the management of your job, why not take up some constructive reading and devote one or two nights a week to it.

If you don't know what to start on, write the editor for one of the courses that OLD-TIMER has laid out for COTTON'S readers.

* * *

DON'T THINK YOU are getting paid *enough* salary eh?

Well, do you really believe the boss thinks you are doing *enough?*

* * *

LUCK! Gosh! That fellow looks like he has all the luck.

Take this tip, brother: You work as hard as he does; you study your job as hard as he does; then maybe you will have a little more luck yourself.

* * *

THE MAN who can stand success (without its going to his head) can stand reverses and come again.

* * *

STRANGE, but after a man has had several jobs he generally settles down on the job which compares with his ability. Have you settled? If you have, remember that a man can practically make himself over by constant application and study. Come out of it!

* * *

"THE FINAL STAGE of improvement will never be reached by any mill, machine or person." This applies especially to that smart guy who thinks he knows it all. I'll not call his name, but you know the fellow I refer to.

THAT LAST PRODUCTION REPORT of yours was fine and you of course feel very much encouraged over what the boss said, but don't forget there was one thing he did *not* say. He did not say for you to stop there, and he knows as well as you do, that you can still find many ways to push it up an inch or two more.

Oh yes, your cost report was also a very creditable one and you are justly proud of it, but don't forget that there is another fellow over at that other mill who is hustling some too, so don't stop to look back, or he may pass you.

* * *

ONE GOOD RULE for happiness:
Keep busy.

* * *

ADVERTISING pays. Are you advertising yourself by running your job better than anyone else they can hire?

* * *

EXPERIENCE is the most valuable teacher we have, providing we profit by our experiences. Do you make the same mistake twice?

* * *

TO BORROW MONEY you usually have to furnish good security, but to borrow trouble you don't have to furnish a darn thing.

* * *

HAVE YOU ever explained to your operatives that they are paying for unnecessary waste, such as broken window lights, broken bobbins, seconds in all parts of the plant, abused living quarters and that general "Don't-give-a-damn" attitude?

"How's that?" you may ask.

Without waste (and this word covers thousands of items) any plant could pay more wages.

* * *

TO MAKE a success.

Mix brains with lots of energy.

I SUPPOSE most every man who did not have the opportunity of a college education regrets it, but very few seem to realize they can still get the equivalent of a college education in less time than they would have gotten it at college.

Look up that OLD-TIMER article about this and read it again.

* * *

HAVE YOU given any of your brother overseers or superintendents a good idea lately to see if they would give you one in return?

That's the way to make yours multiply.

Happy New Year!

Old-Timer asked us to express for him, in this month's issue, his deep appreciation to the many friends and readers who remembered him with Christmas greetings of different kinds. He wishes to express to all of you his sincere thanks for these expressions of thoughtfulness and good cheer.

And for the New Year, he also wishes to send his greetings to every reader, with the hope that 1931 will be the happiest and most successful for every one.—Editor.

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

Treating Cotton for Raw Stock Dyeing.

Do you prefer soda ash or prepared soaps for boiling-off and wetting out? Give us your opinion.

EDITOR COTTON:

We would like to have some practical discussion in your magazine as to just what is the best method for preparing cotton for dyeing in a Chattanooga vacuum raw stock machine, especially when dyeing sulphur colors. The question we would like to have discussed is whether or not it is better to use soda ash for boiling-off and wetting-out the cotton preparatory to dyeing, or should some of the prepared soaps sold under various names be used for this purpose instead of the soda ash.

We would also like to know, if soda ash is recommended for the boiling-off process, would it be considered a good investment to use a soap or textile oil in connection with the dyeing process in order to get more level dyeing. In answering this question, we would like to have the men consider cost and evenness of dyeing both in their discussion.

CONTRIBUTOR NO. 4914.

A Guide in Determining Twist for Roving.

Also this man brings out that an improper lay will cause roving to break back.

EDITOR COTTON:

I was very much interested in the discussion which has been appearing in COTTON, with regard to the possible causes of roving breaking back in the creels of spinning frames. The subject has been interestingly discussed by a number of your contributors in subsequent issues of the magazine.

In reading over these very able replies, I feel that in the answers as a whole the matter is pretty thoroughly covered, with one possible exception, the effect of the lay of the roving on the bobbins, as I did not note that this was touched upon in any of the answers. I might say in passing that it is remarkably interesting how, quite frequently, an apparently unimportant question of this kind can develop interesting information. The percentage of ends down on spinning as a result of break backs is actually very small in proportion to the ends down from other causes, and yet in searching out the probable causes your contributors have developed some unusually valuable information which will be applicable considerably beyond the particular point in question.

As my own contribution to the discussion, I might mention the possible effect of an improper lay. This effect is particularly noticeable in the case of poor, short staple cotton, or on fine work where a very fine strand of roving is used. In such cases, especially, unless care is exercised, it is likely that a mill may not be using the scientifically correct lay. The chances are that the lay is too close; this is particularly true in the South, in the summer time, where a great many mills run with too close a lay on slubbers, intermediates and perhaps fine frames, due to the fact that the cotton is more or less warm, and is in a fluffy condition and the tendency is for the lay to be too close, and for the layers to overlap. When this is the case, the roving will of course be strained to a certain extent, and more twist than would ordinarily be required is necessary in order to offset this. As indicated, this will show up more readily on fine rovings, and with stock which is poor and of short staple. I therefore believe that it is an excellent idea for a mill to make an inspection of the lay at least twice a year. There is no arbitrary rule for determining the correct lay except to judge by the appearance of the roving on the bobbin.

In one of your letters discussing this subject, "B. F. (R. I.)" commented upon the fact that there exists no standard as to the amount of twist in roving. He said, "we have standard breaking strength for yarns, standard speeds, and other standards that we are fairly well able to maintain, and from these to know whether or not we are "hitting on all six." But when it comes to roving twist, the only standard we have is the multiplier times the square root of the hank, and I confess that I do not know what multiplier to use, for the different staples and hanks, that will be to any standard degree of accuracy. If anyone has any accurate information on this point, I would be glad to get it."

In answer to this man, and for the possible information of others, I would like to quote from a letter which you published from me on page 68 of the November, 1927, issue of COTTON, with regard to figuring twist in roving. The formula given is of course only to be used as a "starter," but I believe it will be useful. I quote from the article mentioned:

"I will give you in this letter a method a friend showed me recently for figuring the twist per inch for roving. This system will work out for any hank roving on slubbers, intermediates, speeders or jack frames, for any staple of cotton and for any mixing

---

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

of cottons. As you know, the machinery catalogs give an arbitrary method of multiplying the square root of the roving by 1.20 or some other constant. However, this is based on 1-inch cotton, without any mixing of waste in it, and does not consider the varying lengths of fiber, used by different mills and the different mixes made up nowadays in the opening rooms.

"On straight cotton, regardless of the conditions, the following formula will give the twist per inch:

$$\sqrt{\frac{1.8 \times \text{hank roving}}{\text{Length of staple}}} = \text{Twist per inch in roving.}$$

"You will notice that a constant of 1.8 is used for straight cotton. For a mixture of 75 per cent cotton and 25 per cent waste, I have found it better to use 1.9 as the constant, and for a waste mixing, strips, etc., a constant of 2 at this point will be best.

"I know that most mill men, after figuring out the twist, go to a certain extent by the 'feel' of the roving, but even so, I think this little formula will be found useful in checking up on their figures and 'feel.' In other words, if you will use this formula to figure the twist, and then compare it with the theoretically figured twist which has been adjusted to conditions, they will be very close."

As indicated, this little formula is only to be used as a "starter," local conditions varying at different mills, but I believe it will be useful, and I submit it in connection with this discusson.

BOB (GA.)

Split Selvage Fabrics.

EDITOR COTTON:

Some time ago the writer saw an article in "How OTHER MEN MANAGE" on a method of splitting cloth. The method suggested was slightly different from the one we have used successfully, which might be of interest to some men having wide looms idle.

At different times in the past we have found ourselves faced with a situation where we had more business than we could handle on our narrow looms (needless to say, this was long ago) and no business for our wide looms. At such times we frequently made a "split selvage" fabric on our wide looms by making a double-width warp and splitting the cloth on the loom as it wove.

Such goods can be used easily for pocketing and similar uses, and usually sells for about the same price as the regular drills of that weight, or perhaps one-quarter cent under. The reduction in manufacturing cost we have actually worked out to be between ten and fifteen per cent.

The cutters can be made by the shop crew with very little expense, and the razor blades can be bought of any cut-rate drug store at a low price.

A piece of one-eighth by one-half inch strap iron, twelve inches long, is bent in the shape shown in the sketch, Fig. 1, to lie flat against the breast-beam of the loom and with a quarter-turn to present the edge to the fell of the cloth. Near one end a 3-8-inch hole is drilled through which a bolt is passed for fastening to the breast-beam of the loom.

Near the other end drill two small holes about 5-8-inch apart. Through the upper one pass a rivet and brad one side. Through the lower hole goes a stove bolt with nut and washer. A long double-edged Durham-Duplex razor blade is slipped on the rivet and bolt, and adjusted to give a cutting edge to the cloth. As the blade dulls it can be slipped up and down, adjustment being held by tightening up on the stove bolt, the rivet merely acting as a guide. When one edge is gone, the blade is reversed to use the other edge.

In order to use the device successfully the warp should have a few more than double the regular number of ends. Draw the warp in the reed in the regular manner without skipping any dents in the middle on the drawing-in machine. Then when the warp is tied in the loom, the smash-hand can pull the ends out of about six dents, in the center. These ends then can be drawn double in the reed and harness on each side of the open space to form a regular selvage-draw for each roll, on each side.

There is one important point in this connection, however, which if neglected, will allow the cloth to ravel. The dent on each side next to the open space

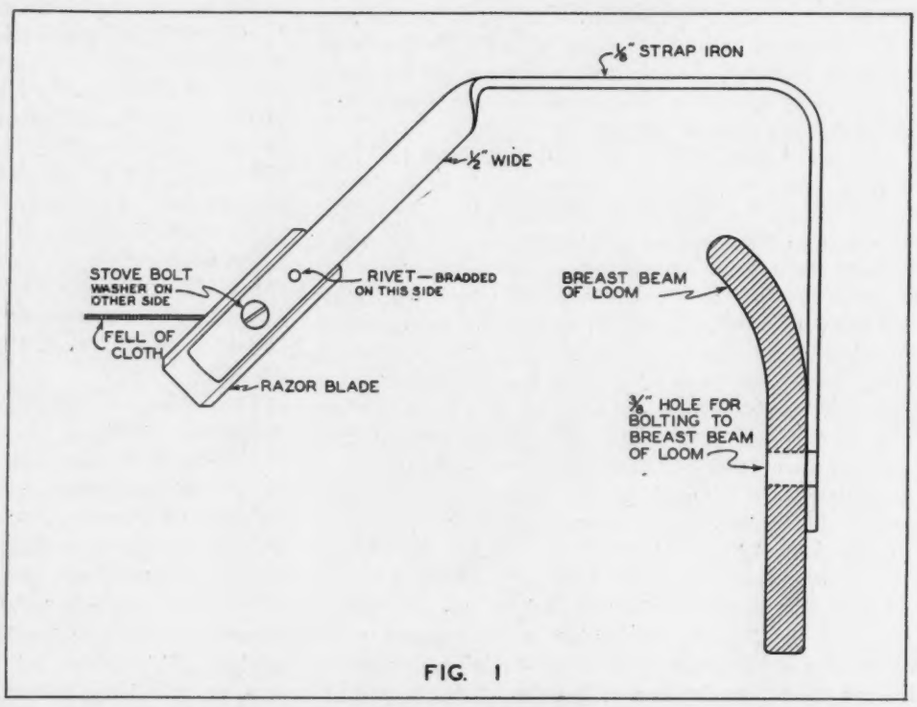
⅛" STRAP IRON
½" WIDE
STOVE BOLT WASHER ON OTHER SIDE
RIVET—BRADDED ON THIS SIDE
BREAST BEAM OF LOOM
FELL OF CLOTH
RAZOR BLADE
⅜" HOLE FOR BOLTING TO BREAST BEAM OF LOOM

FIG. 1

should be drawn single (as in the body of the cloth), after the three dents of double draws have been made. This single draw will prevent the cloth ravelling to any great extent. If the ends are drawn double right up to the open space, the double number of ends tends to spread the filling apart and allows the warp to ravel more than it will if the above directions are carried out.

In the cloth room this cloth may be run through the brusher, calendar and folder in the usual manner. It should not be weighted and stretched too much on the brusher, however, as this also causes ravelling.

We have never tried splitting a sheeting, but have done it on several weights of three harness drills with no trouble at all. This does not, of course, reduce carding and spinning costs on the goods; but it very materially lowers weaving costs, inasmuch as it gives two rolls of cloth for the price of weaving and loom-fixing on one wide roll.

CONTRIBUTOR NO. 4852.

What the Master Mechanic Should Be and Do.

By a man who isn't a master mechanic, but who knows them. Your views on this subject will be welcome.

EDITOR COTTON:

Your publication of a letter by "C. G. (GA.)" in the October issue in which he dealt with his job and responsibilities as a master mechanic reminded me of a question which was asked by somebody a few months ago, through the medium of this department, about the duties of an assistant superintendent, which I believe was duly answered, and so I consider that as "C. G's" letter is presented to all readers for their judgment and comments, or criticism, it cannot be any misdemeanor on my part in venturing to pour forth my humble ideas on the subject of the duties and responsibilities of a master mechanic, or, as some of the men are termed, the mechanical superintendent.

Yes, master of all things mechanical. At least, that is the meaning we should naturally derive from those two words which apply to a man who holds such a position. Here, let the reader understand before I start to ramble, that the writer does not at present earn his daily bread by holding the position of a man about whom he wishes to write, but notwithstanding that fact, he feels quite capable of expressing his ideas on the subject.

In the second paragraph of "C. G's" letter he states that the master mechanic must be a Christian gentleman. True, and so should all heads of any department, but the master mechanic should also be a calm, shrewd, calculating individual, that is, one who sees trouble ahead before anyone else sees it; a man who is always on the lookout for trouble of any kind in order that he may check it, by whatever means he has available before the trouble becomes disastrous.

The foregoing, as can readily be understood, calls for a man with the intelligence of a sleuth, and with such alertness in one man, whose attitude creates the same feeling in other department heads and subordinates alike, any plant under such supervision will realize the benefit of the sleuth methods adopted.

So much for the natural characteristics of the master mechanic, but, as our friend "C. G." infers, he must also be a "jack of all trades," or a combination, using the term applied by "C. G.", and above all a good manager of help. Though he undoubtedly will have men at his command in a large plant through which his orders are executed by the help of various branches of the maintenance department, he must never lose touch with the help in order to become acquainted with the individual ability of each and every one, on his respective job.

A knowledge of the foregoing will help to make the master mechanic somewhat of an "efficiency expert." He will be able to determine how to place any of his help on certain jobs and the number required in every case; also, the amount of time which should be expended on accomplishing same.

In order to be capable of arriving at these aforesaid decisions, he must also have an all round knowledge of the work in hand, which calls for constant study of the whole lay-out of the plant of the company by whom he is employed. He is bound to be constantly seeking and gathering information concerning the running of each department and the machinery, etc., employed therein, and also be able at any time to draft a new lay-out when required, in order perhaps to acquire a saving for the company for the betterment of production, or any other beneficial effect.

The foregoing, of course, demands some knowledge of mill planning, which undoubtedly could be acquired in conjunction with the overseer of the department involved, though the master mechanic will be expected to take the lead in these matters. He should have a knowledge of the ill effects of over-heating or under-heating of the machinery, and especially the work in process in a cotton mill, for instance, where poor judgment in the application of heating will create a great loss in time, and waste. This part of his job will also necessitate his understanding something about humidification of various rooms where humidity plays such an important part in the running of the work. In the mill planning capacity he will probably have to direct the moving or installing of machinery by the easiest, quickest, safest and cheapest method.

Then again, this master mechanic must have a sound practical knowledge of the use of all kinds of tools, and their individual uses, and must be capable of reading blue prints and be able to draft anything quite clearly. Hence the call for draftsmanship, to some extent, and also some knowledge of up-to-date construction methods.

Having borne the strain of all this analysis it will be noticed that my description of this man really calls for a highly technical as well as practical man, in addition to being a person of very calm and patient disposition. True, there are few men possessing these qualities at all times, but this is the writer's deep conviction as to how a master mechanic should measure up in a large plant.

Our friend "C. G." is perfectly right in his statement in the last paragraph of his article when he asks

if it isn't true that the master mechanic is responsible for everything in the mill all of the time, and, I might add, sometimes in the mill village. He probably has to maintain the role of chief of the fire company, and in this capacity he must possess a perfect mind picture of the complete installation or layout of the sprinkler system, shut-offs, valves, hydrant, etc., and, furthermore, be capable of periodically giving instructions in these matters and others pertaining to the prevention and the fighting of outbreaks of fire.

Probably we could go on enumerating all the jobs laid down to the master mechanic, but it seems to be a case similar to that proverbial saying of the opposite sex, but, instead, we might safely say that some master mechanics' work is never done.

I would like to thank "C. G." for his letter, as such letters from men holding different positions give other fellows a chance to set forth their views about what they think concerning the other fellow's job.

E. D. (R. I.)

Controlling Bad Work from the Card Room.

Discussions on this important and difficult problem are still coming in. Send in your ideas.

EDITOR COTTON:

In reply to the question in a recent number of COTTON by "CONTRIBUTOR No. 4759," as to how to control bad work from the card room, the writer has given this problem quite a bit of study and has worked out a system which is giving very satisfactory results under the conditions existing at the mill where it is being used, and, with a few changes to meet other local conditions, it might be an improvement over the handling of this problem at some other mills.

The important necessity of the system is to be able to identify a bobbin of roving at any time while it is in process, as to size and the operative who made it. The first is taken care of by having the tips of the bobbins painted different colors, letting each color represent a definite hank roving. For instance, a mill making 2.00-hank roving, 3.75-hank roving, and 4.00-hank roving could use red, green and black-tipped bobbins to represent the different numbers of roving, and where conditions will permit it is a great help never to use a color for any other size of roving than the one it represents regularly. In the case used as an illustration, red represents 2.00-hank roving. This can be put before the operatives so impressively that wherever they see a red tipped bobbin it automatically means 2.00-hank roving to them, which will reduce to a minimum the ever-present danger of getting roving mixed, in a mill running several different numbers.

The next problem is to identify the operative who made the work. This is done in the regular way with different colored textile crayons. For instance, you have John Green, Henry Smith, etc., working on the frames. Let red marked bobbins mean John Green wherever they are found, and green mean Henry Smith whenever it is found. It would be necessary in a large mill, of course, to divide the bad work into sections to fit local conditions. This is usually done by different hank roving. In the event a mill runs night and day, have the marker to start marking the roving not more than ten minutes before changing time and work as far as they run on the bobbin. Then when the frame doffs, if any other than the regular frame hand is working on the opposite shift, mark the bobbin the balance of the way with crayon representing the man who finished running the doff. In the case of the regular frame hand, he could be identified by the man who works opposite him. The spare hand must be handled this way on both the morning and evening change to keep him from confusing the man responsible for identifying the bad work. It is always better to have someone other than the machine operative to do the marking, because this does away with the temptation to locate bad work while running and skip it when marking.

The next phase of the operation is how to get this bad work from the spinning room and call it to the attention of the operative. Many spinners will naturally set back all singles, doubles and tangled bobbins rather than clean them up, as it is easier to set in a new bobbin. No bonus should be necessary for this, as it is the easiest way to do the work anyway.

If there is any special type of bad work which might run through without the end coming down, such as oily roving or clearer waste in the roving, which is particularly objectionable in a mill's product, it might be a good idea to pay a bonus for these, as a bonus would cause the spinners to keep a sharp lookout for these types of bad work in the creels at all times. A spinner should set all bad work on end on top of the creel, so that the man who takes it up can see it at a glance. The man who takes the work up and separates it would have to be selected to fit local conditions. In a small mill the overseer of spinning can do it, or where there is a second hand, he can do it. In a large mill it will pay big dividends to have a man do noth-

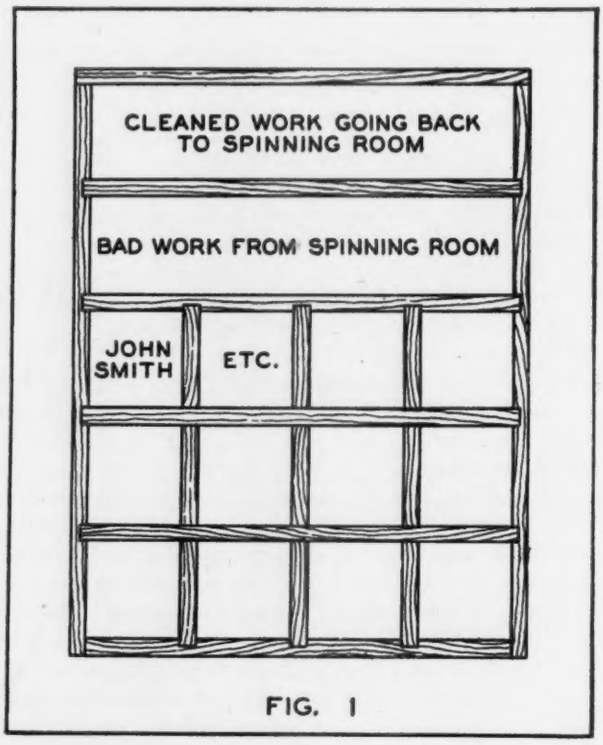

FIG. 1

ing but this sort of work throughout the mill. In any case he should be a man who is fair and square with both the company and the operatives. In one mill it was found best to take a man off of his brother's roving because the balance of the operatives were suspicious of the good record he was making. It would be a good idea for any man adopting this plan to look over his organization with the idea in mind of reorganizing it for the least possible amount of friction of this sort.

There should be a special place made to put the bad work when it is taken down, to help in sorting it out for distribution to the operatives, by sending it to them or letting them come and get it. The shelves illustrated in Fig. 1 are very effective for this.

The top shelf is used for cleaned work going back to the spinning room. The next shelf is used for all bad work from the spinning room. The smaller compartments below are used for each individual operative's bad work.

This cabinet is more or less self-explanatory. The bad work from the spinning room is put on a shelf for that purpose. From here it is then separated by the crayon mark on the roving and put in the compartments made for the different operatives. It would be a good idea to have the name of the operative and a sample marking of his color of crayon over each compartment. The operative can get it from here, carry it to his frames and at leisure moments clean it up

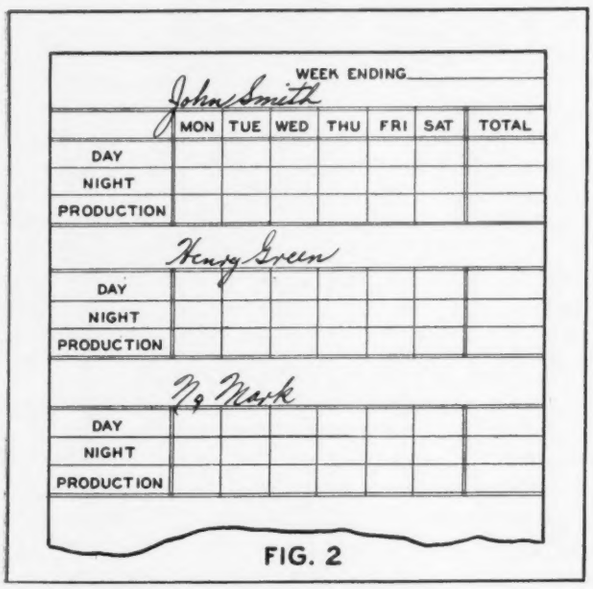

FIG. 2

and return it to the shelf marked, Cleaned Work, Going Back to the Spinning Room if this is possible. It is then taken by the roving man and set back of the rolls where a bobbin is about to run out in the lower creel, or set on the roving guide rod leaning against the top creel board where a bobbin is about to run out in the top creel, from which point the spinner sets it back in the creel. This disposition is made of it because if it is laid on the top of the creel with the regular roving, the spinner will, in most cases, not set it in without being constantly reminded, and it is more evenly distributed through the work than if it were run on certain frames.

The next thing is the records which must be kept to make this system really effective. It is best to keep two records, a daily record and a weekly record. The daily form should be made out similar to that shown in Fig. 2.

It will be noted that there are three lines for each operative. The first line is for the work taken up in the day time, and the second is for that taken up in the night time. I might add here that it is a good idea to have a certain time to take down the bad work and separate it and work it up. This can be done about one and a half hours before changing time on both shifts, or if one man does it he could do it just after and just before changing time. The third line on the

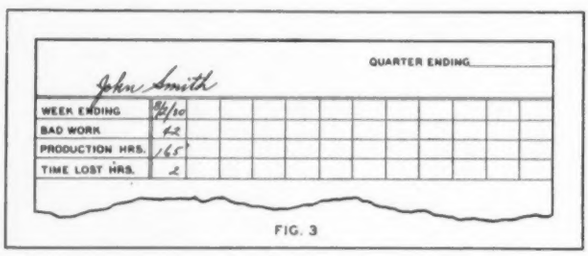

FIG. 3

sheet is for production. This is kept so that the operatives can be compared with reference to their production.

The weekly form is very similar to this except that it deals in weeks instead of days, and gives a good comparison of the work and production, of the different operatives, allowing plenty of time to determine who is really trying to make good work and who isn't. This is as shown in Fig. 3.

This form has four lines. The first is for the date of the week, the second for the bad work, the third for the production and the fourth for time lost. The form is made for a period of twelve weeks before it is totaled. Where it is possible to run a bad roving section with all the men on the same hank roving and the same conditions all the way through, some very valuable comparisons can be worked out from this point. The bad work per unit of production can be compared. The time lost for the period and the production per unit of time can be compared. These three comparisons and others that come up should give an overseer a good picture of just what an operative is and whether to work to improve him or let him go.

One of the big advantages of this system is that there is nothing about it that suggests force. It makes of the work a game instead of a grind and the records kept are the score which is constantly before the players. The natural inclination of every worthwhile man and woman is the desire to excel. This makes it distasteful for them to see their names down opposite a poor score, and when an operative hits the bottom one week and his name is written in red on the weekly form, indicating the worst score for the week, there will be some scrambling to get out of that place the next week. If there isn't, the overseer in charge should weigh very seriously the advisability of letting that operative go.

I have not tried to present this system as being perfect, or as a cure-all, but rather as a group of ideas

which if developed by a capable overseer to suit him and his conditions will go a long way toward solving this universal problem.

G. C. (GA.)

Constants for Figuring Production When Yarn Speed is Known.

EDITOR COTTON:

I would like to present for the information and use of your readers a table of constants for figuring productions, which is applicable in any case where the speed of the yarn in yards per minute is known. The table is based upon the following formula, figured out for 1s yarn:

$$\frac{\text{1 yard per minute x 60 minutes x 10 hours}}{\text{1 x 840}} = \frac{600}{840} = .7143$$

Thus, the production in pounds of 1s yarn, running at 1 yard per minute, will be .7143 for ten hours. At two yards per minute, it will be 2 × .7143 or 1.4286, and so on. On this basis, I have worked out the following table, which is based on 1s yarn showing these figures for 10 hours, 55 hours, 60 hours, 8 hours and 48 hours:

PRODUCTION TABLE.

Yards per Minute	10 hrs.	55 hrs.	60 hrs.	8 hrs.	48 hrs.
1	.7143	3.929	4.286	.5714	3.4284
2	1.4286	7.858	8.572	1.1424	6.852
3	2.1429	11.787	12.857	1.7144	10.284
4	2.8572	15.716	17.143	2.2856	13.710
5	3.5717	19.645	21.429	2.8576	17.142
6	4.2858	23.574	25.715	3.4208	20.526
7	5.0001	27.503	30.001	4.000	24.00
8	5.7144	31.432	34.286	4.5712	27.426
9	6.4287	35.361	38.572	5.1429	30.858

As an example of the use of the table, let us assume that it is desired to find the pounds production per day of a winding spindle whose yarn speed is 525 yards per minute, on 15s yarn. According to the table, the constant for 5 yards per minute is 3.5715, then the constant for 500 yards per minute would be 100 × 3.5715 or 357.15. In like manner, the constant for 20 yards per minute will be 10 × 1.4286 or 14.286. Then the constant for 525 yards per minute will be as follows:

500 yards per minute	357.15
20 yards per minute	14.286
5 yards per minute	3.5715
	375.0075

Then 375.01 ÷ 15s = 25.0 pounds per ten hours, at 100 per cent.

When it is desired to figure on a certain efficiency it will generally be found easier to obtain the net yarn speed in advance of using the constant. For instance, suppose the yarn speed is 500 yards per minute at 80 per cent efficiency. The net yarn speed will be 80 per cent of 500, or 400 yards per minute. The table can then be used with the net yarn speed, and the result will be pounds of production at the efficiency specified.

Suppose we want to know the pounds per week of a high speed warper running 400 yards a minute on 15s yarn, 400 ends, 60 hour week—assuming an efficiency of 70 per cent.

70 per cent of 400 = 280 net yards per minute.

As previously shown, we now get the constant for 280 yards a minute by taking the constant for 200 yards per minute, which is 857.2 and adding to it the constant for 80 yards per minute, which is 342.86, which gives a constant for the 280 yards a minute of 1200.06. Then:

$$\frac{1200}{15s} \times 400 \text{ ends in warp} = 32{,}000 \text{ pounds per week of 60 hours.}$$

The constant .7143 will be found very useful to users of this slide rule. Instead of trying to set up this figure on the slide rule, if we refer back to the derivation of this constant, we find that it is obtained by dividing 600 by 840. If, then, we set 84 on the slide opposite the 6 on the lower scale, the constant .7143 automatically set opposite the 1 of the slide. Then move the hair line over to the figure on the slide representing the net yarn speed. Then move the slide until the figure on the slide which represents the yarn number comes under the hair line, and the pounds per 10 hours can be read opposite the 1 of the slide.

BOB (GA.)

The Proper Belt for a Loom Drive.

The discussion about putting starch on loom belts prompts some interesting comments from this correspondent.

EDITOR COTTON:

The discussion you have been publishing with regard to putting starch on loom belts has brought out a great many thoughts and it is interesting to get the different viewpoints of the various contributors. This feeling around for information is sure to bring out the elimination of this common practice of putting starch, lime, rosin and other grease absorbing material on belts. The immediate effect of this practice is nothing more than the absorption of grease or oil that might be on the surface of the belt and pulleys along with a certain amount of moisture, and the result to the belt is always harmful.

These discussions have also brought out various thoughts as to direct motor connections for looms, and "B. M. (ALA.)" on page 46 of the November issue, seems to feel that if the motor is correctly proportioned, the rotor will slow down and thus absorb the shock of reversals. He apparently has overlooked the fact that in induction motors this "slip" or slowing down of a multitude of small motors constitutes one of the "leaks" around industrial plants that so frequently are overlooked. I refer to loss of efficiency in small motors.

"B. M." seems to think that the motor rotor will slow down at each reversal of the pick, but picture in your mind the effect of a balance wheel on gasoline engines put on there for the express purpose of boosting the crank shaft over the peak of compression, and you get a fair reproduction of what happens where a rapidly whirling motor rotor or armature is called on to absorb shock.

In this same November number, "H. C. (PA.)" has contributed a splendid discussion regarding mineral-

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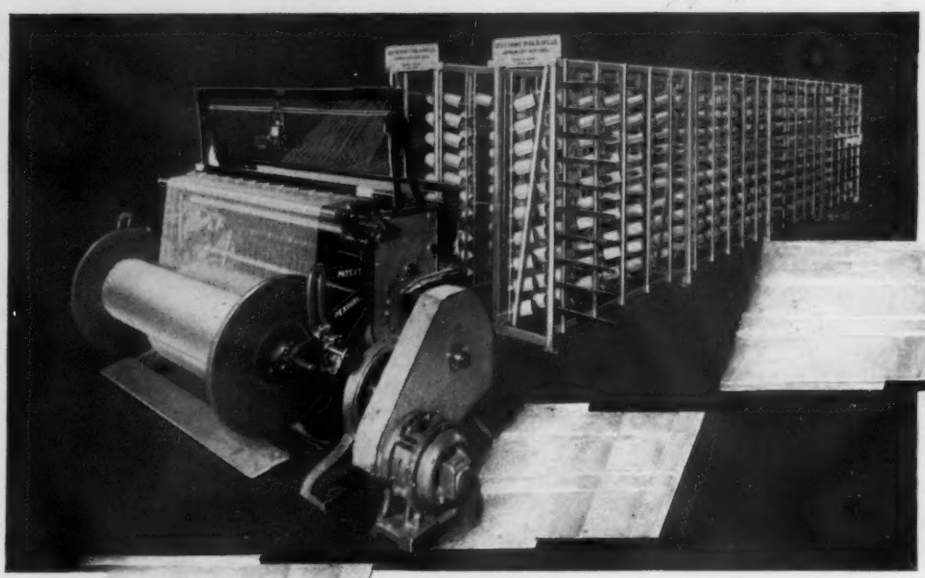

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tanned belts, but leaves a doubt in our minds as to how well he approves of them, as you will note that he says, "It may be, however, that this very property of a mineral-tanned belt may make it unsuitable," etc. Why the hesitancy, when it is a proven fact that some of the retanned leathers have the very qualifications desired?

Take a light double belt made of re-tanned, or as he expresses it, "mineral-tanned" leather. We get a resilience or elasticity that absorbs the shock of reversals, and being in a double, we get sufficient weight to carry the load without excessive tension; therefore the gliding off or on the idle pulley is easier and the shock is not noticeable and the "screech" mentioned in one of your articles is avoidable—or, if occurring, it has little or no influence on the belt because the very nature of such leather is that a raised temperature does not affect the leather as it does in oak-tanned material.

The fallacy of using light single oak belts has been proven. It is a mistake to assume that by using a light single belt there will be a slippage at the peaks of reversal at each pick and in this way absorb the shock. With these light belts it is necessary to run them tight, and even a drop of oil or moisture will affect the operation. If one will take time to study this one point he will find that these single belts are slipping severely, as can be noted by the polished faces of the pulleys, and this slip is tolerated at the expense of speed variation.

Or we might use the simile of a train coming to a stop or slowing down. It will be noted that there is a lapse of time to build back the speed, and the same thing occurs in the light single belt. I admit, when properly tensioned, the slip occurs at the right place to absorb the shock, but the slow recovery is disastrous to production. When your automobile begins to skid it takes several moments to slow it down and get the necessary traction again, and the belt does the same thing.

We have found that a better way is to use a soft re-tanned leather that has a high resiliency and elasticity and absorbs the shock in the strands of leather. Then with the adhesion it has to the pulleys, we do not have to wait for recovery from slippage on each reversal, but gets this smooth operation from the springiness of the belt and the quick recovery and maintained speeds—and the counters will show positively increased production.

This is nothing new. This cushion or springiness is obtained in steam engines to absorb the shock of reversals, known to engineers as "cushion." Steam is admitted slightly in advance of arrival at the end of the stroke and this catching up of the slack absorbs the looseness or shock of reversal and the same springiness is obtained by the use of a re-tanned leather belt. This will give nearer a smooth pulseless operation. Not having to depend on slackness or slippage, the recovery from reversal is quicker in the resilient leather, and just a pick or two per minute pays for the trouble and possibly high cost. When this type of leather is brushed off or cleaned, and the starch or other fillers omitted, a treatment of belt lubricant now and then will produce satisfactory results.

E. C. R. (GA.)

"Textile Student" Versus Practical Man."

EDITOR COTTON:

Is the textile student a human being, and is the practical man a human being? You will answer "Yes." All right then, why is it that in some cases both sides don't seem to appreciate this fact, and why don't they get closer together and help one another? Because they both have something that the other one doesn't have and which he needs. They should swap knowledge. Then they will both get something that will do them good. To adopt any other course is only hurting themselves, and the industry as well.

You will often hear a textile student say, concerning a practical man, "He is a good fellow and knows his business, but he is not a trained man." But right there is where he is wrong, because the practical man is one of the best trained men in the world, because he has been trained in the best school in the world—the school of experience.

As a rule, however, he lacks the personality which the student has, and he cannot explain things in a clear and up-to-date way like the student can, but when it comes to doing things, he can do a whole lot that the student can't, and when the student gets out of his head the idea that the practical man is no good because he never went to college, and when the practical man gets it out of his head that the student is no good because he went to college, and they decide to pull togther and cut out all that bosh, then things are going to function more smoothly.

A few years ago I heard a superintendent and an overseer discussing the textile students, and the overseer asked the superintendent, who was a practical man, what he thought of the students, and his reply was that students are no good—that sending them to college makes fools of them . And at that time, the superintendent's boy was getting a textile training at a well known textile school. That goes to show that he did not mean what he said. If he had, he would never have sent his boy to a college to make a fool out of him.

The whole thing, in my opinion, got started on the wrong track a few years ago. The practical man got it into his head that the student was going to root him out of his job. This is more bosh. There will be practical overseers and superintendents as long as there are cotton mills, and as long as the practical man can show the right kind of results, no student nor anyone else will ever root him out. The one thing that will make this situation firm is that the practical man must realize that he must learn the things he has never tried to learn before, and he must get busy. Such things as mathematics, personality, etc., are absolutely essential if he is to remain, and the main reason for this, and the main inspiration for the practical man learning these things is no one else than the textile student. Instead of being an injury to the practical man he has been of a great help to him. The practical man of today is much better than the practical man of yesterday, and the textile student of today is much better than the student of yesterday, and the textile schools have brought about this condition.

There is, however, still room for improvement on

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both sides, and the best step they can take is to get closer together and be more friendly, and last, but not least, continue the swapping or trading of knowledge one with the other and be constructive and not destructive. Think it over.

J. T. D. (MISS.)

Suggestions for Getting Cleaner Laps.

Answering a man who wanted to do this, but who has no opening equipment.

EDITOR COTTON:

I noted the inquiry of your "CONTRIBUTOR NO. 4838," as to securing cleaner picker laps. He stated his conditions, which I shall quote, for reference, as follows. He said:

"We run 1 3/16-inch cotton. We do not have any opening equipment. The bales are mixed ten at one time, by hand, and aged in bins for about one week.

"We have three processes of pickers, 1900 model. The first or breaker picker has two beaters, a spiked or porcupine type, and a two-blade beater. The fan speeds on the breaker are, first, 1,150 r.p.m., and, second, 1,050 r.p.m. The intermediate machine has a two-blade beater, and a fan speed of 1,150 r.p.m. The beater in the finisher is a Kirschner or carding type, and the fan speed is 1,000 r.p.m. Our production is about 6,000 pounds a week.

"As indicated, we want cleaner laps than we are getting, with less lumps, and I should appreciate any suggestions which your readers may offer."

First, in attempting to answer him, I will say that he will never get the most satisfactory results without suitable opening equipment, in order to get the cotton into a more fluffy condition for the pickers. For his lay-out, I believe that a hopper bale opener, and two 30-inch cylinder machines with cage section would be sufficient for his purposes.

However, looking at the problem in the light of what he has to work with, my first observation is that apparently his fan speeds are suitable to his conditions. On his intermediate two-blade beater, I would suggest a setting of 5/16-inch, with a beater speed of around 1,000 r.p.m. On the Kirschner beater in the finisher picker, I would suggest a setting of ¼ to 5/16-inch, with a speed of between 800 and 900 r.p.m. On his spiked or porcupine beater in the breaker, I would suggest a speed of 550 r.p.m., and a speed of from 1,050 to 1,100 r.p.m., for the second beater, two-blade, in this machine.

In connection with the spiked or porcupine beater in the breaker, since the machines are so old, in case he has not already done so I would suggest that he turn the beater around in the machine, so that the opposite sides of the spikes will strike the cotton.

As a general suggestion, I would experiment with the spacings of the grid bars, making these as wide as possible without throwing out good cotton.

As indicated I have made these suggestions upon the basis of his lay-out, and bearing in mind that he desires more cleaning. I must repeat that comparatively little can be accomplished without suitable opening machinery, but I hope the foregoing may be of some value to him.

CONTRIBUTOR NO. 4839.

"Wash" Tells a "True Story."

EDITOR COTTON:

No doubt many readers of this department read "true story" magazines. How interesting it would be to have a true story textile magazine. Remember "OLD TIMER" and "Jim" and the trips through the mill? How many benefited? Very many. Nothing can replace such stuff to the mutual advantage of the readers. "OLD TIMER" has set the example, and I think it will make COTTON just a little more interesting to run a true story in these columns every little while. I am going to start the ball to rolling with the following story, and I hope the boys will follow, and what a treat it would be to have "OLD TIMER" follow. I bet he could give us a corker.

A mill received a large order from a large knitting mill. The contract called for so many doublings of lap. Everything was going smoothly and we had shipped about 80,000 pounds when the writer was called to the main office. The writer was superintendent of the mill and the man at the helm was president, agent and treasurer. I was instructed to cut out one process, and as the doublings were already small, the only process that could be cut out was the intermediates. After the shipment of a few thousand pounds, we received a letter from the knitting mill, in which they stated the unevenness in our yarn had been detected, and that they were shipping every pound back to us, and that the contract was broken.

We were running night and day, and the loss of this order forced us to cut out the night work. This all happened in the year 1920. It was an election year, and immediately after the election a large concern in South America, our next best customer, cancelled all orders. This was due also to the reduction of doublings. So the mill, instead of running night and day, was running only part time.

It was only a short time after this that our agent and treasurer was taken ill with stomach trouble, due to nervousness, and unfortunately died, thus ending the story.

Now, although the cotton mills are going through the greatest depression in their history, some mills are gaining orders, while others are lacking orders. Why is this so?

Without considering the equipment, which varies a great deal in different mills, and also the doublings, the following tricks, combined with wrong hang-ups, have done the industry a great deal of harm. For instance, let us assume that the man in charge of the card room in this case is one of the long-draft boys. Again, let us assume that the price per hank is low. Well, you know very few mill superintendents take the trouble or time to size the roving, and of course the carder knows this. So he may report the hank roving lighter, and this leaves a few hanks to be distributed among the tenders. This of course, increases their pay, and the advantage of this system is that you get the cream of the help at the expense of the mill with an increased draft. This is the way it is worked:

The constant for production on a frame of 176 spindles is $176 \div 4 = 44$ pounds for 4.00-hank roving,

BELIEVING thoroughly in the future of the Textile Industry, with a confidence supported by our many years of intimate contact with its principals, we look upon 1931 as the beginning of a new era of textile manufacture; a year of progress and of unique developments actuated by sound, forward-minded policies.

Alert to these challenging factors, we therefore join in cooperating with the Industry toward more efficient and continually modern methods of manufacture and distribution . .

1 To continue to use our resources and modern methods of manufacture that textile men can be assured of engineered excellence with every shipment of US Bobbins, Spools and Shuttles.

2 To promote economies in mill time and materials—by supplying mill men with true-running, long-lived performance-value in all US Products.

3 To place at the disposal of textile men our Engineering and Research Departments for encouraging definite improvements in the design of bobbins, shuttles and spools.

4 To encourage the development of new products to meet new conditions and new methods in textile manufacture.

5 At all times to extend to the Textile Industry willing and capable service particularly as it may apply to bobbins, spools and shuttles *in the manufacture of which the Company has over seventy-four years of experience.*

U S Bobbin & Shuttle Co.

MANCHESTER, N. H. MONTICELLO, GA.

176 ÷ 4.25 = 41.41 pounds, for 4.25-hank roving. Hanks turned off 1440 × 44 = 63,360 pounds of 4.00-hank roving. 1440 × 41.41 = 59,630 pounds of 4.25-hank roving. 63,360 — 59,630 = 3,730 pounds. 3730 ÷ 41.41 = 90 hanks to be distributed. The foregoing evil can be seen at a glance, for it increases both the cost and the draft.

In such a case, if the spinner is up-to-date, he will not allow the carder to rob him of a tooth of draft now and then, but insist, instead, on only a variation of about 1/10 of a hank either way from standard. But you know in many mills, the spinner and carder work together, and the yarn is allowed to run heavy also. Then a certain number of ends is taken out of the warper, and this enables the overseer of spinning, spooling and warping to give boxes at the spoolers and pounds at the warper.

The foregoing is carried to such an extent in some mills where those in charge are not up-to-date, that the mule spinner must make a lighter filling to balance the weight of the cloth, and the weaver must resort to a bastard reed to make up for the ends robbed at the warper.

With the automatic spoolers and high speed warpers, there is little chance of reducing the number of ends, or given-away boxes, for the reason that it would be quickly detected, as there are only two of each in any 50,000-spindle cotton mill.

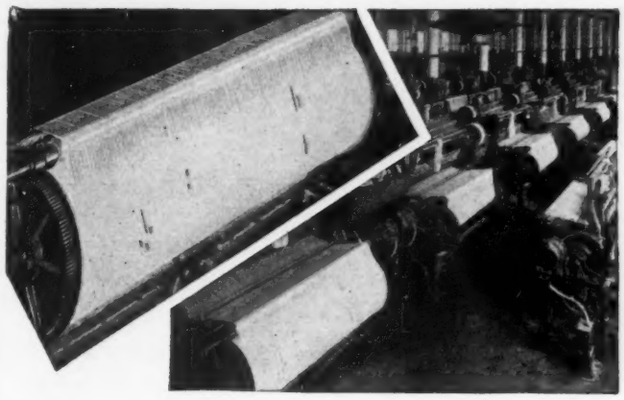
On the foregoing machines the spooling speed is about 1,200 yards per minute, and the warper speed averages about 550 yards per minute.

Next, you know the many tricks employed in the weaving, such as using castile soap to hide a poor scratch-up; extra sand-paper on the sand-roll to stretch the cloth, etc. I could go on and give more evidence of such tricks, but enough has been given to prove that such a practice is going on and such it is that is hurting the cotton industry.

The foregoing applies to knitting mills, and also mills manufacturing blankets, quilts, etc., and not fine goods mills.

Next, let us do a little retrospecting. I wonder how many readers remember the old Marvel & Davol drawing frames. Of course at that time those frames were looked upon as wonderful machines, and the doublings were arranged 3 into 1 instead of 6 into 1 which is most common at present. A medium-sized spindle cotton mill in those days contained about 40 cards. The picker room equipment consisted of one breaker and two finisher pickers. So, along the 90's most mills running 50,000 spindles consisted of 48 to 54 cards. Next, in 1900 the number was increased to 60 and in some cases 70. Now why was the number of cards increased from the year 1890 (or about that time) to the present time from 40 to 70 cards for a mill running the same number of spindles and turning off the same finished production? There is only one answer, and that is, that the builders and mill engineers discovered, that for all classes of work, the more rapidly the work can be got from the card, consistent with the quality or grade of work required, the stronger the yarn, and I think it will be found that the above is a fast rule with all the builders to this day.

Remember this, a great deal of machinery was



Stop the Loom—
Oil spots on the warp!

The photograph shows an actual mill condition — liquid oil has spattered onto the warp from some of the loom bearings.

Yes — stop the loom — and put NON-FLUID OIL in the bearings — it's a sure way of keeping the goods clean — for NON-FLUID OIL is made extremely adhesive and simply will not drip, spatter or creep.

This profit-cutting of oil spots can be practically eliminated by the use of NON-FLUID OIL on all your other textile machinery throughout the mill.

The cost is lower — too — for each application of NON-FLUID OIL outlasts liquid oil several times — reducing your lubrication cost per hour while providing the highest quality lubrication protection.

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shipped across the water to foreign lands, especially to Japan. We have a great deal of competition, and it is up to us to watch and see that some of these countries do not get the jump on us as regards the proper hang-up for the manufacture of a certain class of yarn or cloth. This is why I am writing this article, to make you all careful.

Let me predict something right here, and it won't be long now before it happens. You are going to see an increase in the number of cards, and the doublings increased at the drawing frames.

You will see the doublings on the drawings increased to as high as ten with the finished drawing sliver under 50 grains.

In fine goods mills the finished sliver will be under 40 grain and for certain classes of work under 30, and the second intermediates will be discarded, which will bring the cost about equal. Remember the cost on the cards will not be any greater, for the same number of pounds would be turned off. Each stripper would tend to more cards for the same money, and the same would apply at the drawing frames.

In order to fight competing yarns we must improve our yarn; we must make the yarn uniform and strong. This can only be done by those who have mastered the art of drafting, which means that the man qualified can sample the raw stock and then arrange so many doublings of laps to be drawn so many inches with the proper amount of twist, and let me say right here that such men are not found every day. Let the reader turn back to the August issue of COTTON and examine the two lay-outs as given by "CONTRIBUTOR No. 4568". This man is a thinker, and knows the art of drafting. Read what he states about exposing the fibers to the licker-in teeth with the long draft. Next, examine his lay-out and notice how gradual it is. Notice in the lay-out as given by "CONTRIBUTOR No. 4101" that he has a finished drawing sliver of 60 grains. Just think of it. Then he has the problem of reducing this heavy strand to 70s yarn. Now can this be done without increasing frictional contact on all front rolls in the proceeding processes? Surely there is not a reader of this department but what will agree that the longer the draft the greater the friction on both the front rolls and fibers. This is what I am trying to convey to the readers of this department, that it is much better to start with a light sliver and reduce the frictional contact on the front rolls, which insures an even yarn.

We must work on a system that will give us a very light sliver to begin with. Something like the waste system where we find two coilers to each card. We double at every opportunity, so as to destroy as much as possible, all defective places in the strand. Then why make a heavy sliver and cause the work to run badly and create a lot of waste that must be run over again together with defective piecings, that in most cases can be detected in the strand or yarn with the naked eye. Some men may say that it is easy to point all this out on paper, but in actual practice it is something else. The only excuse for a heavy sliver is the lack of machines in the preceding processes, but I have already pointed out the necessity of a larger number of cards and drawings, so as to double where the doublings should be. I may be wrong, but here are some of the things that are hurting the cotton in-

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dustry: Poor stock; average running good stock mixed with waste, even stick waste; lack of humidification; wrong drafts and settings; the lack of standard twist to suit the fibers forming the strand; frictional contact of the front rolls due to excessive drafting and poor lubrication; neglected webs at the card and drawings and the tension on fly frames; dirty machinery, etc.

The chief trouble with the cotton industry at the present time is too much experimenting. Some will try heavy roving, then run it single at the spinning. Others will run waste, and of course waste makes waste, and also weak yarn. Others will cut out a certain process and worry over the outcome.

With the best of cotton any new method appears wonderful. To produce an even yarn, all frictional contact, as much as possible, should be destroyed, so the reader should be careful not to have his drafts excessive.

WASH (R. I.)

Some Points on Card Grinding.

EDITOR COTTON:

In the March, 1930, issue of COTTON we were asked by "T. A. D. (GA.)" whether card clothing stays sharp longer when stripped by the old time band or hand stripper than when stripped with the newer type vacuum stripper.

"WASH (R. I.)", in the June issue, stated that he fails to see how the stripping wire could dull the clothing, and our friend, "J. R. (GA.)", writing in the same issue, seemed uncertain about the outcome.

Now in a few brief remarks I wish to advance my belief in this matter, which might throw a different light from that already advanced upon the subject.

In the first place, I would like to say that in my opinion I do believe the use of a stripping brush wire on card clothing robs the latter of some of its sharpness.

Most of us know that when we have a clothing, the wire points of which have become hooked or barbed, and the cloth felted through some ill treatment, say careless setting, we resort to the use of a burnisher.

This burnisher wire is a soft, perfectly straight wire, but still by using it on a wire in the aforementioned condition we are able to wear off the barbs, etc., and get a smoother point on the wire, which, of course, requires proper grinding after burnishing.

A stripping fillet is of a tougher nature than burnisher wire, and the fine point of a properly ground wire is of a delicate construction, which, even though the stripping wire and the ground wire do not come into contact as often as when the burnisher is used, aids in dull points being the result. Then too, not only does the stripping wire contribute to the dulling action, but we also have a mass of matted fibers and trash beating against the clothing surface for several revolutions. The result is similar to the effect obtained when an overload of stock is received by the cylinder, calling upon the carding surface to perform undue work.

Furthermore, it seems to me that a good many carders have their stripping brushes set too deep into the clothing, thereby encouraging the loss of the fine points. On a properly ground wire a stripping brush should never be set any deeper than one-eighth of an inch. Such a setting ought to take care of all embedded fibers, etc.

The foregoing statements, I imagine, ought to point out that stripping wire in the operation of stripping card clothing tends, or rather gives a polished effect, and polished carding wire points are useless. Vacuum strippers, on the other hand, do not touch the wire, hence this ill effect is not obtained. Still, apart from this, I think that if grinding is kept up to concert pitch that the stripping brush is the best for the operation.

In spite of the tendency of the stripping brush to produce ill effects, I believe that careful, precise and frequent light grinding will eliminate the appearance of the defect to the wire points.

I hope that we may have a little more discussion on the subject.

D. E. (R. I.)

The Value of an Explanation.

Tell the help why, as well as what and how—is the advice of this overseer.

EDITOR COTTON:

"Why is it that operatives are so careless?" This question was asked me some time ago by a cotton mill overseer. I answered this question by saying I thought much of it was due to the fact that we overseers fail to stop and take the time to explain things to the help as we should.

For instance, we see a speeder tender making long piecings when creeling. What do we do? We tell this operative that they must not do that, but we don't take the time to explain what the results will be if these long piecings are allowed to go through.

Then again, we see a card hand making a long lap when putting on a new set of laps, or we see the drawing boy making a long lap when setting in a can behind his frame, or holding the frame on allowing a singling to go through for a yard or so. We just tell them they must not do this or that, and don't explain to them why.

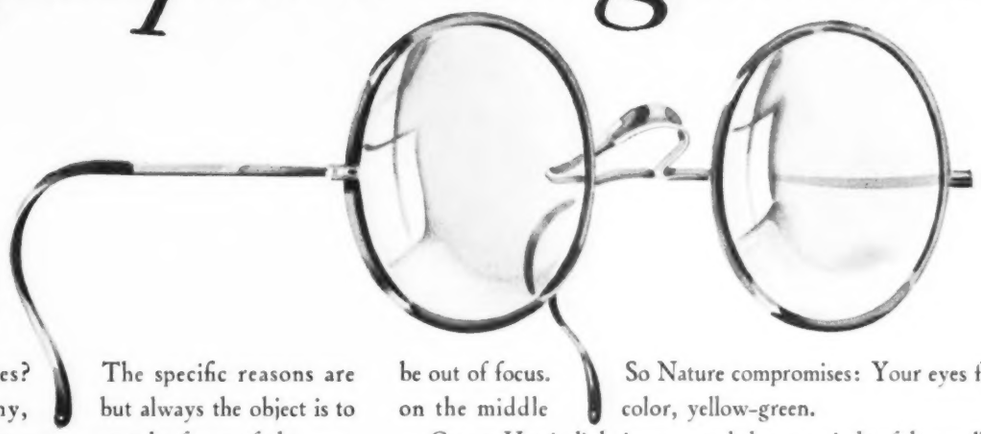
The thing we should do is to get out among our help and do a little more good thorough explaining to them. I think it is the overseers who are careless rather than the help. So I think we overseers should really learn how to run our job. We should do as OLD TIMER suggested awhile back. We should answer the question he asked, "Would You Hire Yourself for Your Job?"

I think we should get out in the alleys more and see how the old job is running. There is not one moment in the day that we cannot find something going wrong. We should all get a little more of that stuff called "pep." Let's tell that spinner why she should not make long pieces when she sets in a full bobbin of roving. Let's explain to the spooler hand why she should not let slack ends go onto the spools, but hold the slack back.

We could go on and on, but I hope I have said enough to stimulate a little thought along this line.

A. T. (N. C.)

Why *do people wear glasses?*

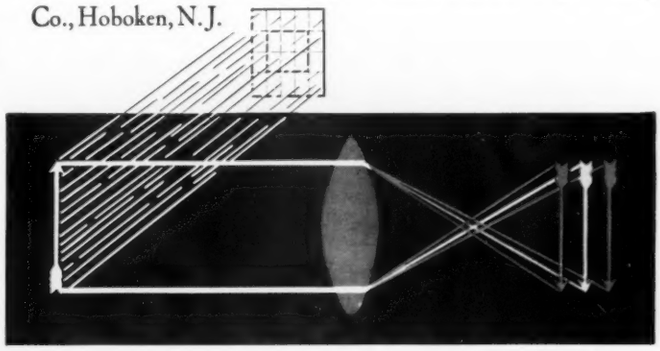


WHY wear glasses? The specific reasons are varied and many, but always the object is to improve impaired vision—to correct the focus of the eyes. Faulty focus, you know, makes objects appear hazy—blurs outlines and strains your eyes.

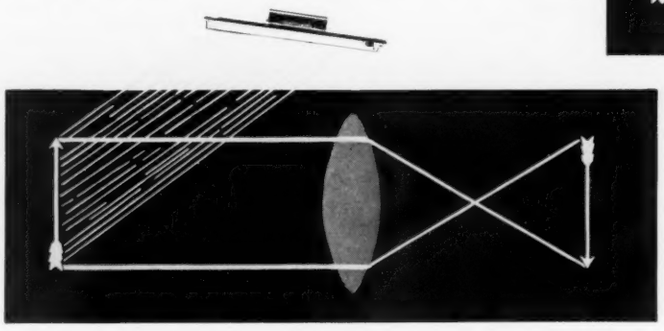
Weak eyes brought back to normal by the use of glasses, and even normal eyes without glasses, do not see objects as clearly as the construction of the eye permits. For there is a *natural* faulty focus of wholly *normal* eyes, which is caused by the complex mixture of colored rays that compose daylight or "white" light.

Your eyes are unable to bring all these colors in white light to the same plane of focus in the eye. Should your eyes focus on a color at one end of the spectrum, say red or orange, the colors at the other end, blue and violet, would be out of focus. So Nature compromises: Your eyes focus on the middle color, yellow-green.

Cooper Hewitt light is composed almost entirely of these yellow-green rays—That's why all objects under Cooper Hewitt light are seen clearly and sharply without eye-strain. Have you read "Why Cooper Hewitt light is better than daylight?" A copy of this booklet is yours for the asking. General Electric Vapor Lamp Co., Hoboken, N.J.



Diagrammatic illustration of the effect produced when white light passes through a lens similar to that in the human eye. The light is split into its various colors, only one of which can be focused sharply. The other colors, being slightly out of focus, tend to make the image hazy.



When Cooper Hewitt light, which is 90% yellow-green, passes through a lens similar to that in the eye, the image produced is sharp and clear, for the effect is practically that of a single color, and that the best-seeing color and the easiest on the eyes.

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VAPOR LAMP COMPANY

(See next page)

where WOULD *you go to thread a needle?*

In an exaggerated circumstance—say, when you thread a needle—you recognize instantly the importance of both the adequacy and the direction of light. And just so does light play its part in your industrial plant.

. — .

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Exact figures on the number and value of rejects, seconds and other losses caused directly and indirectly by inadequate and improper lighting are, of course, most difficult to obtain. But this much can be said:

. — .

Only 15 per cent of America's industrial plants are adequately and properly lighted. In these, accidents are comparatively few, seconds run low and production is high.

. — .

Only 29 per cent can be said to be "fairly well lighted." In these, accidents are more common, the percentage of seconds runs higher and production is lower.

. — .

The remaining 56 per cent of all industrial plants are classed as poorly lighted. And in these, investigation has shown, the accident rate is high, the percentage of seconds is high and production is lowest.

. — .

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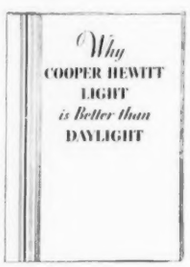
Cooper Hewitt mercury-vapor light, as some thirty different industries in America have discovered, is *the* light that "gets the industrial needle threaded." Some reasons why it helps reduce waste to a minimum, improves quality, and increases efficiency and profits generally, are given on the opposite side of this page. Many of the reasons are simply explained in the new illustrated booklet, "Why Cooper Hewitt Light is Better than Daylight." Free for the asking. Address: General Electric Vapor Lamp Co., 853 Adams St., Hoboken, N. J.



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(See preceding page)

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Bow in Wide Sheeting.

EDITOR COTTON:

In a recent number of COTTON, "CONTRIBUTOR NO. 4636" submitted an inquiry as to the causes of bow in wide sheetings, especially when it is torn. He said that his cloth is 65 x 64, made of 22s warp and 27s filling, the warp twist being about 22.50 and the filling twist about 21.50, the goods being made on Draper L Model wide sheeting looms, with compound and friction let-off.

I cannot give the real reason of what causes bow cloth, but I am giving a suggestion that may help remedy this defect.

I believe in this particular case, the filling yarn has too much twist. If the filling used has 21.50 twist, I think that about 18.50 twist would be quite near enough for 27s filling in this case.

In this case, I figure that a filling with too much twist, will cause a bow in the cloth, a filling with too much twist will slide more easily in the shed, than it would if the filling would be less twisted and a little harder to slide in the shed. I believe this would cause the cloth to weave more evenly by using a filling with less twist.

Another thing that may be the cause of this trouble is that the shed opens too much, or the temples are not set right, or it may depend upon the way in which the cloth passes to the cut roll.

CONTRIBUTOR NO. 4660.

Answers "Wash" on Card Drafts.

Going into more detail as to why he prefers a heavy lap on the cards. What are your ideas?

EDITOR COTTON:

This is in answer to the comments of "WASH," who in the October issue stated that I believe in a heavy lap and a light sliver, rather than a light lap and a heavy sliver. I have come to the conclusion that "WASH" is trying to avoid the issue, or he is politely trying to call me a fibber.

If he will turn back to the March issue, he will see that I made the following statement: "a heavy lap and a light feed," and not a heavy lap and a light sliver. I did not mention anything about the weight of the sliver. When I say a heavy lap and a light feed will make a better yarn, I mean that a card will do better work at the same production, or a given number of pounds per week, if a heavy lap is used; for instance, we will take a 10½-ounce lap and make a 40-grain sliver on one card, and on another card we will make a 40-grain sliver of a 12-ounce lap, both doffers running at the same speed.

How does "WASH" figure that a card running on a longer draft will rob the cotton of its waxy walls any more than a card running on a short draft when all speeds are alike? Does "WASH" realize that both cards are having the same amount of cotton fed into the card from the feed roll, and the same amount of cotton delivered from the doffer per minute? In other words, the licker-in is taking so many fibers per minute from the feed roll, so I can't see where the longer card draft can do a lot of harm to the waxy walls of the fiber.

Now, if carding does so much to weaken the fiber, or if the action of the card takes so much strength from the yarn, why did the old timers use double carding for fine yarns and single carding for coarse yarns? I say that in making fine yarns, it is necessary to get the neps and leaf out, or there will be a large number of ends down in spinning and low breaking strength will also be obtained.

I will give another reason why I prefer a heavy lap. It is that a better lap can be made with less thin places, which will give the feed roll on the card a much better bite and gives the licker-in a more even sheet of cotton to work on.

As for having trouble with the licker-in belt, as stated by "WASH," I have never seen anything of the kind, and I have seen cards running with drafts from 100 to 145.

I will now answer the question as asked by "WASH" in his article "'Wash' Comments on Carding," which appeared in the October, 1930, issue. I will take them up in order.

His first question read, "From a point at the bite of the feed roll and feed plate to the coiler calender rolls, which fibers will receive the most severe treatment, the ones making the journey in a short period of time, or those requiring longer?" In answer to this question, I will say that from a point at the bite of the feed roll to the coiler calender rolls the fibers all get the same amount of severe treatment, as "WASH" calls it, regardless of the amount of draft, with, of course, the same number of pounds per hour of cotton being fed to the licker-in.

His second question was, "Can foreign matter be extracted more easily from a light bulk of cotton than from a heavy one?" In this case I find from actual tests that I get more foreign matter out of my heavy sheet of cotton, but of course my heavy sheet of cotton is being fed slower than a light lap would be fed.

In question No. 3 "WASH" asked, "Which gives the best gradual draft, a heavy or light sheet of lap and why?" The heavy lap gives me the best gradual draft, because as I stated before, I can make a better lap and also have more fibers to the cross-section at every inch of my lap to help eliminate some of the stretch between the lap rolls and feed rolls.

The fourth question was, "Does the length of the draft on the card affect the speed of the licker-in?" I do not believe it does.

I find short drafts better on the machine preceding and succeeding the card, which is in answer to the fifth question of "WASH," which read, "Are short drafts better on the machine preceding and succeeding the card?"

"If a heavy lap and light sliver will make a stronger roving and yarn, where does the source of the increased strength come from?" This was the sixth question asked by "WASH." The source of the increased strength of the yarn is obtained from having less foreign matter in it.

Now for his last question, which was directed at me, "In your actual experience, when you ("K. Y.")

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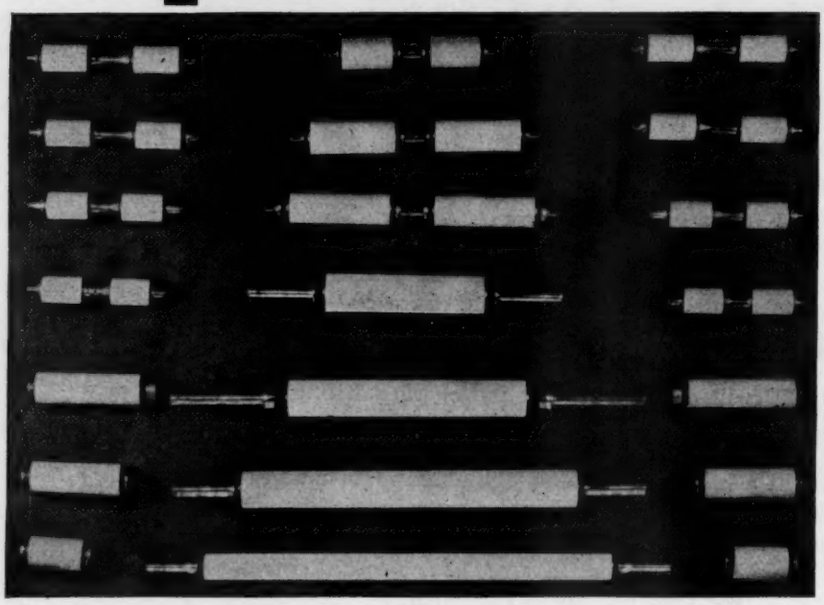

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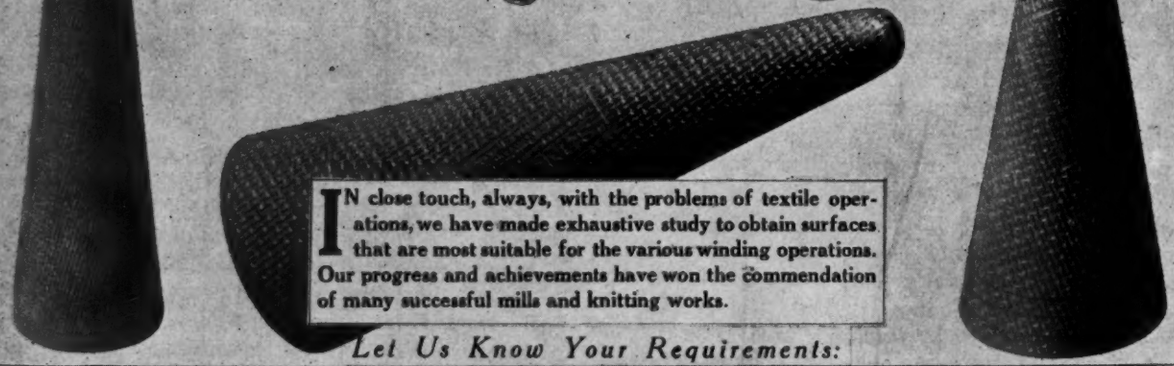

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tested the merits of the short and long draft, was the stock run from the same bale of cotton?" I will say that when I tested the merits of short and long drafts, I certainly used the stock from the same bale of cotton, and I also ran the stock through the same cards to be certain that there would not be any difference in the settings.

I surely would like for some of the readers to make this test on both coarse and fine yarns and send the results in to COTTON. It would then be possible to tell who should be elected—"WASH", with his short drafts, or "K. Y.", with his long drafts.

K. Y. (MASS.)

Comments on This and That.

EDITOR COTTON:

When I receive my copy of COTTON each month I always turn to the index and find "OLD-TIMER'S" page first. I enjoy reading "OLD-TIMER'S" articles because he always hits the nail on the head.

In regard to his article "It," which appeared in the January issue, I believe I can offer one suggestion that will aid anyone to obtain the "It" that "OLD-TIMER" spoke of—and that it is for them to keep the corners of their mouths turned up.

Well, "OLD-TIMER," I certainly hope you will keep the good work up, for I am sure that it means just as much to other readers as it does to me.

I also enjoy reading the articles of "HANK G. SPINDLE," and I would certainly like to hear him, "OLD-TIMER" and some of the other good ones discuss quick and slow carding.

In the January issue "HANK" gave us some very good information on thick and thin places. I think that he covered the subject very thoroughly, but as we have had this same trouble, I have a few comments I would like to make.

When we changed to one-process drawing, at first the roving would come through in lumps about an inch in length and so large that they would not go through the flyer. We spaced the rolls a little wider and this helped some, but in order to take care of the big lumps coming through we had to space the rolls so wide that they did not draft evenly, and this caused thick and thin places in the roving. We then changed the weights from 18 and 20 pounds to 24 pounds (front and back). We next spaced the rolls back like they were at the start. Since then we have had no more trouble of this nature and the roving has looked 50 per cent better.

Care of Card Flats.

I don't believe in progressive setting of the card flats because experience has taught me that the closer the flats are set to the cylinder the less neps will be found in the web or sliver. If the card is properly set up and looked after there will be no large tufts of cotton striking the flats where the cotton first comes in contact with them. I remember some time back in setting our flats, they gauged up as they should for about 8 inches on each end but in the middle of the card the gauge would not touch the cylinder or flats, so I didn't have any idea what the setting was. At that time I thought that made very little difference,

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TANNER TYPE RE-SETTING PICK COUNTERS Afford Instant Comparison of Actual and Expected Production

By re-setting counting units to *zero*, production is totalled from start of pay period only. Expected production is posted in card holder, while actual production appears on the Counter. Each weaver becomes his own supervisor. Unauthorized re-setting impossible.... Ask for free trial installation.

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but since then I have found out better.

I first found that the traverse grinders were not true and were grinding the cylinder hollow in the middle. Next I found that we had been using the flat drum grinder too long without re-covering it. This caused us to have high flats on each end because each end of the drum grinder fillet had become slick. Therefore, the flats were being ground on only about three-fourths of their surface. This was due to the ends of the drum grinder only brushing the teeth of each end of the flats down and slipping over them.

Care should be taken when grinding flats not to have a slack driving band, as this will cause high and low flats. It is also impossible to sharpen flats with a slack driving band.

Now, let me ask some questions, and I hope the readers will answer them thoroughly:

Something to Pass the Time Away.

1. Why are the cones of a fly frame convex and concave?

2. How is a production constant for a card found?

3. How is a production constant for a fly frame found?

4. Does sliver receive any twist from the rotation of the tube gear of a coiler on a card?

5. Why isn't it possible to use a 10-inch tube gear for a 12-inch can?

6. How does changing the stripper plate of a card regulate the strippings?

7. When adjusting the step of a spindle does it raise and lower the spindle?

8. What causes a traverse grinder for a card to beat at the gear end when it is perfectly true and has been properly cleaned and lubricated?

9. Is there any chance of a coiler making a different weight of card sliver from another coiler with the same draft gear and the same weight of lap on each card? Why?

T. R. (N. C.)

Preventing Good Stock Going to Dust Room.

EDITOR COTTON:

In the March issue of COTTON we see that "H. F. (N. C.)" is having trouble with good cotton going through his condenser into the dust room. We once had the same trouble, which caused considerable worry for some time, but we finally found the cause, which was very easily overcome. I am glad to pass this along to "H. F." as it might help him in his trouble.

We were using a No. 7 fan with a No. 6 condenser. The condenser was of a type which had lagging leather packed around the screen openings in the condenser side which fitted closely around the screen to prevent the air from escaping this way and carrying cotton with it. We found that the lagging was too narrow and did not serve its purpose. We immediately got and put on some wider lagging, which stopped the cotton from going to the dust room.

I would caution anyone not to use anything except

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PICKER STICKS
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In every line of products there is one that always stands out head and shoulders among the rest. From the way textile men are endorsing "Hickory" Picker Sticks, and the way others are using these sticks as comparison, the fact is indisputable that
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a good lagging leather. This can be bought from almost any good belting company. I think a lagging two inches wide would be all right, and would stop the difficulty if it was of the same character as ours.

Of course there are other things which might cause this trouble, such as too high a fan speed, but as indicated, this was the remedy in our case and I pass it along for whatever it may be worth.

T. F. (N. C.)

Textile Chemists and Colorists Hold Meeting in Chattanooga.

(*Continued from page* 227.)

of a dyestuff remain the same in mixtures as when dyed alone. In other words, that each dyer must experiment by himself and not forget that the nature of his goods, the finishing materials used can, occasionally, although not nearly so often as might be thought, affect adversely the dyes used.

One of the papers recommended that the chemist get out more into the mill instead of staying so much in the laboratory. That was good advice but it did not possibly go far enough and recommend that a chemist is not really entitled to direct a textile laboratory until he is almost a graduate practical man. A young chemist, newly from college, would be badly advised to wander out into the plant and start directing a finisher, even though said finisher did not know the chemical effect he was producing on the goods.

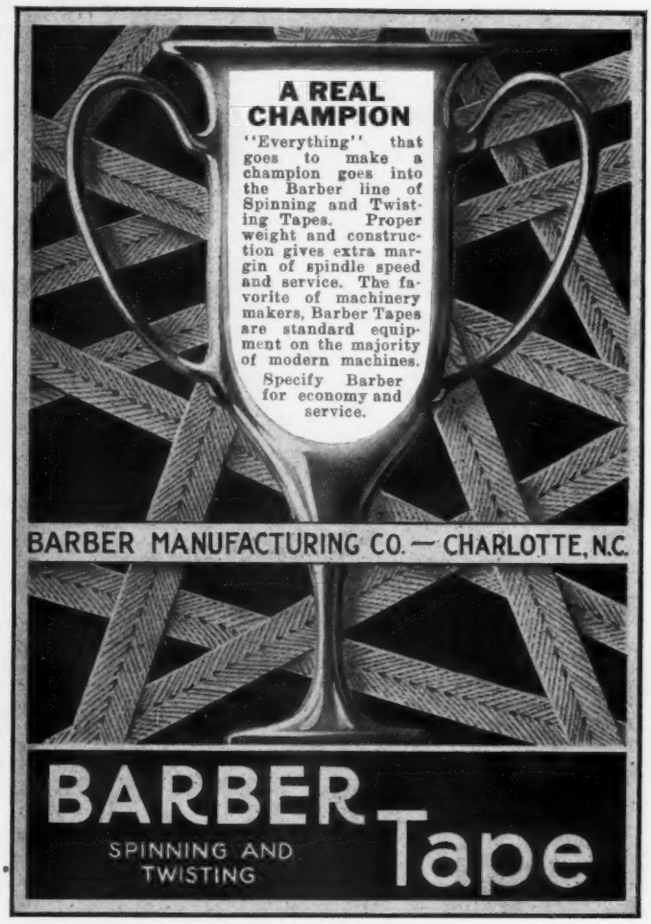
Another paper stressed the need for accuracy in the various tests made in the laboratory and brought out the fact that we do not yet possess complete control of testing methods.

Electrical Developments in the Textile Industry in 1930.

(*Continued from page* 230.)

In all lines of industry, including the textile industry, there is an increasing interest in the use of vacuum tubes of one type or another. Properly designed equipment, making use of photo-electric cells, grid glow tubes, amplifier tubes, etc., are being used for a great many types of operation requiring counting, inspection, sorting. The field appears to be almost unlimited and its development is just beginning.

The outlook for the future of the textile industry appears to be much brighter at the present time than it has at any time for several years. The conditions which have caused the unusual depression are recognized and definite steps are being taken to overcome the basic troubles. The industry will continue on a highly competitive basis and mills which have modern equipment will be in position to manufacture at a profit. Those mills which are not kept up-to-date, will undoubtedly continue to suffer. The outstanding developments of the textile machinery manufacturer, coupled with the equipment now being offered by electrical manufacturers, offer the progressive mill management, equipment, by means of which costs may be kept at a minimum.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TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

1. **Cotton Picking, Carding and Spinning**—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

2. **Pepperell Equipment**—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

4. **New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor**—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

5. **The Bahnson Master Control**—Bulletin No. 801, 5 pages. Illustrated. Automatic device designed to control humidifying equipment so as to maintain a constant relative humidity. By the Bahnson Company, Winston-Salem, N. C.

6. **"Cotton" Weather Vein, 32 pages; "Rayon" Weather Vein, 40 pages;** house publication, illustrated. Bulletin 58, 80 pages, illustrated; **Manufactured Weather**—the automatic control of air conditions within buildings. Carrier Engineering Corporation, Newark, N. J.

8. "Textile Brushes"—10 page booklet illustrating brushes for cleaning every part of mill. By Gastonia Brush Co., Gastonia, N. C.

9. **"Custom-Built" Motors**—Complete set of bulletins covering various types of electric motors for textile master mechanics and executives. By Louis Allis Company, Milwaukee, Wis.

10. **Leathers, Textile**—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. **Whitinsville Rings**—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

12-A—**Instruction Manual for Type K Bobbin Cleaner.** Also, **Instruction Manual for Utsman Bobbin Cleaner**—two separate booklets describing adjustments of machines outlined, and also describing effect of bobbin shapes upon the cleaning process. These booklets intended for users of machines outlined. Applicants should designate which booklet is desired. By the Terrell Machine Company, Charlotte, N. C.

12-B—**Instruction Manual for the Termaco Roving Bobbin Cleaner**—booklet in four sections on adjustment of machine; on how to use machine to best advantage in reducing waste and saving labor; parts catalog; description of new attachments which can be applied to earlier models of the machine. By the Terrell Machine Company, Charlotte, N. C.

13-A. **Equipping Modern Textile Plants**—Booklet, 35 pages, illustrated. Describes value of Monel Metal equipment in textile plants and presents reports from mill owners and operators on actual experiences; equipment, descriptions, etc. **Also Dyed in the Truth**—Reprints of advertisements of special interest to textile dyers. International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

14. **Emerson Conditioning Ovens**—2 booklets on conditioning of textiles, or determination of the amount of moisture in textiles. Issued by Emerson Apparatus Co., Melrose Highlands Mass.

15. **Saving Labor, Material and Power in the Textile Industry**—Bulletin No. 133. Illustrated. Controlling, Recording and Indicating Instruments in textile mills. Temperature, Pressure, Humidity, equipment layouts and descriptive applications. The Foxboro Company, Foxboro, Mass.

17. **The Powers System of Thermostatic Control**—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

18. **Popular Industrial Chemistry**—162-page handbook for dyers, chemists, finishers, purchasing agents. By Kali Manufacturing Company, Philadelphia, Pa.

19. **Quaker City Chemical Co.**—48-page booklet containing useful information, tables, formulae, on dyeing, bleaching and finishing all textiles. Issued by above company, 2736 North Broad St., Philadelphia, Pa.

20. **Bleaching, Dyeing, Finishing and Printing Textile Goods**—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

21. **Warp Sizing and Composition of Cotton**—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

22. **Tragasol and Its Uses**—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

23. **Practice of Rayon Sizing in American Mills, Raygomm, Lakco Gum**—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

24. **Wyandotte in the Textile Mill**—90-page booklet with information on bleaching, dyeing all textiles, including hosiery.—J. B. Ford Co., Wyandotte, Mich.

25. **Textile Specialties and Woodworking**—16-page illustrated booklet describing wood top rolls, pin boards, loom beams, warper beams, etc. By Wm. McLeod, Inc., Fall River, Mass.

27. **The Seven Factors of Belting Economy**—Booklet, 112 pages, illustrated, containing authoritative information on the economical layout, care and operation of belt drives. Chas. A. Schieren Company, 33 Ferry Street, New York, N. Y.

28. **Akron Belting**—Practical rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

30. **Lubrication of Textile Machinery**—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

31. **Aluminum Paint—The Coat of Metal Protection**—Booklet, 46 pages. Illustrated. The protecting and light reflecting qualities of Aluminum paint; its advantages to textile industry; where it is used; specifications. By Aluminum Company of America, 2400 Oliver Bldg., Pittsburgh, Pa.

32. **Flooring, Open Steel, Area Gratings and Steps**—Folder, 6 pages. Illustrated. For platforms, walks and stairs; non-slipping. By Kerlow Steel Flooring Company, Jersey City, N. J.

33. **Cast Iron Columns**—18-page booklet on use of cast iron columns in mill construction. By National Cast Iron Pipe Co., Birmingham, Ala.

38. **Sleaziness in Full Fashioned Knitting**—Illustrated survey with samples of fabric showing causes of sleaziness, and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog of Reading full fashioned machine with general information on subject of full fashioned knitting.)

39. **Trend of Sales of Silk, Rayon and Cotton in the Piece Goods Departments;** twenty-four-page booklet; prepared by DuPont Rayon Company in conjunction with National Retail Dry Goods Association. Copy furnished without charge by either of above. DuPont Rayon Co., 2 Park Ave., New York, N. Y.

40. **The New Competition in Color**—20 page illustrated booklet. Discusses future trends in business and their significance. present trend toward fast colors in textile industry and opportunity this trend offers for increased profits is properly utilized. By Franklin Process Co., Providence, R. I.

41. **Budget Control**—40-page booklet showing how each part of business budget should be prepared and principles of its effective operation together with a summary of benefits.—by Ernst & Ernst, accountants, 27 Cedar Street, New York, N. Y. (This company also has available booklets on **Standard Costs, Business Control Through Analysis, The Better Wage, Factors to Consider in Working Out Mergers.**)

42—**Textiles and the Telephone Typewriter**—6 page booklet on telephone typewriter service for communication between mills and selling houses. By American Tel. and Tel. Co., Long Lines Department, Atlanta, Ga.

44. **Points of Interest in and Around Atlanta**—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

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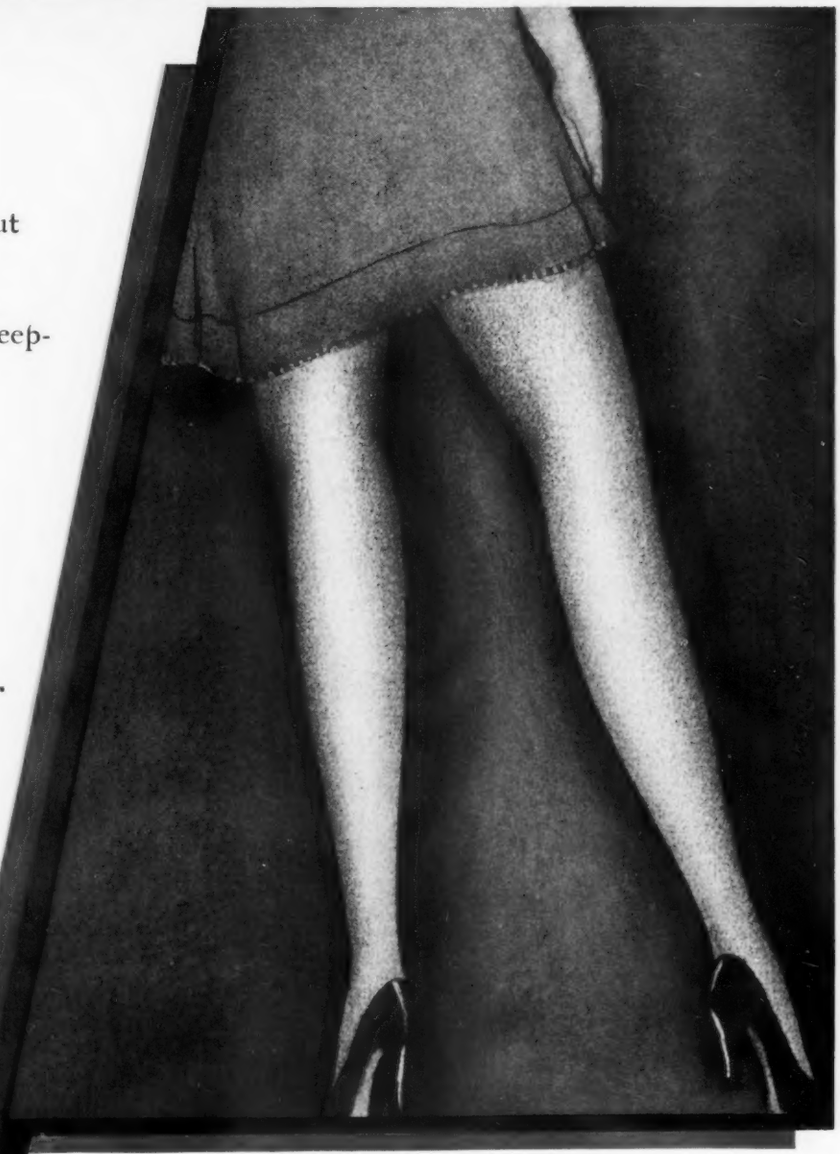

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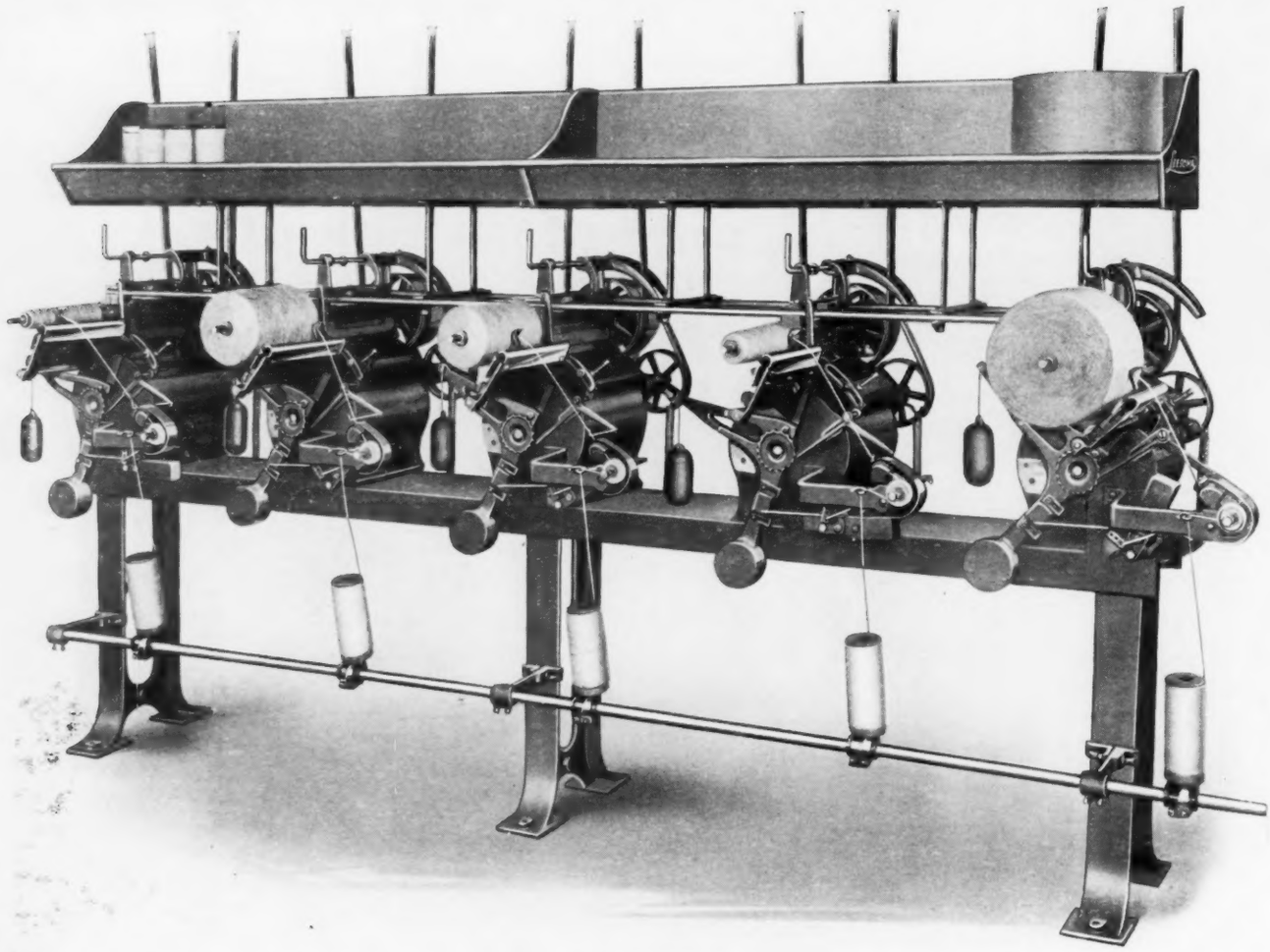

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UNIVERSAL WINDERS

DEAR DAD:

Since the winter season set in and we have had to put steam on in the mill, I have had a great deal of trouble with the silk drying out and making crepy fabric and short lengths. We have been considering for some time putting in an air conditioning system, but can't see our way clear at this time with business conditions as they are to make so large an investment. What would you advise in this matter?

With love to all, I remain

YOUR SON.

DEAR SON:

I have your letter with reference to the air conditioning system for your mill. The very things that you mention in your letter are sufficient to warrant your purchasing air conditioning equipment. You cannot really appreciate the value of the system until you have made a comparison. Reason will indicate certain advantages, while actual practice more than confirms them. We reduced our seconds percentage four per cent the first month after installing the system. When we consider the greatly improved working conditions in the plant, and the general improvement in the quality of our product, we would not consider trying to do without it.

Your inquiry in this connection gives me an opportunity to offer some general suggestions in this connection. On any matter of this kind, I would strongly recommend a very thorough and careful investigation, and if the investigation reveals that it would be a profitable investment, then I would not hesitate to put it in. I believe that frequently we neglect operating equipment to the detriment of efficiency and progress. We are looking too much for men who can save money and overlooking the man of vision who might spend some money advantageously.

The man who can spend five dollars and earn fifty cents is five times more valuable than one who can spend one dollar and earn ten cents. We are again reminded of the parable of the talents. The man with the five talents earned five other talents, while the man with the one talent buried it.

One of the great economic problems of the country today is to find safe investments for idle capital, and the man who can successfully invest his company's money to earn larger dividends is always in demand.

In bringing this question down to plain, simple, every-day mill problems, I will give you an example

Old Knitter's New Year Greeting

DEAR DAD:

As the new year approaches I am wondering if you will have another New Year message for me this year. I have given considerable thought recently to your last New Year message and especially to this one sentence, "If you are not capable of managing a business that will prove both profitable to employer and employee, then you are not fitted for the job and in justice to yourself and society, you ought to quit and do something that will least affect the well being of others."

After going through with what I have for the past few months I feel inclined to quit and try something else. What do you say?

With love to all, I remain,

Your Devoted Son.

DEAR SON:

Your letter suggesting a New Year message has given me much concern. In casting about for a thought that would suit your case, I found it in the Sunday school lesson, Matthew 8:10, "Verily, I say unto you I have not found so great faith, no not in Israel."

To get the connection, you should read the fifth and eleventh verses inclusive. In this account of Jesus healing the servant of a Centurian, we have an example of faith such as we need today. The scene portrays a meeting of the two greatest captains that the world ever saw. The one an officer in the Roman army, who represented the greatest military system that has ever existed. He said: I have the authority of Caesar and the Roman Legion to support my commands, and I say to this man go and he goeth; and to another come and he cometh; and to my servant do this and he doeth it, but with all this power I am helpless to heal my servant who is grievously tormented and I recognize in this captain of the spiritual universe a force fully able to supply that need which I lack, and I will lay aside all my pride and preconceived ideas about God and His control over material things and with the courage and confidence of a Roman soldier I will seek the aid of this God.

When Jesus heard his story he marveled and then paid him the highest compliment he had ever paid any man. "I have not found so great faith, no, not in Israel." This included Abraham, Moses and all the prophets of Judaism. Here we have an example of a cold-blooded pagan soldier, with an honest heart and an honest purpose, with a love for his servant more effective in his method of finding relief to suffering humanity than we are today with two thousand years of Christian education.

Will the captains of organized labor and the captains of industry accept the challenge to lead their people the only way to a permanent industrial peace? What do you say?

With love, DAD.

VIBRATION HAS ITS PLACE---but,

Its place is *not* in machinery, least of all in full fashioned hosiery machinery. In the new Wildman Machine, vibration with all its dangers has been practically eliminated. This has been accomplished chiefly by adopting an extra heavy base, a perfectly simple remedy which has more than proved its practicability.

Write for further information.

WILDMAN MFG. CO., Full Fashioned Division, Norristown, Pa.

of an experience I had several years ago that will illustrate the point. The window sash in our building was built from old field pine lumber, not properly seasoned, and the heat from the sun caused the sash to warp, and in many places you could stick your finger in the crack between the sash and the stop. It was a western exposure and the winter winds whistled through with chilling effect. We had a line of knitting machines along this wall and it would take us about two hours every morning to get this line of machines in running order. The waste and menders and short length stockings were terrible. The idle ratchets would stick up and the cylinders would not drop and the needle breakage and wrecks kept the machines standing.

One day I suggested to the boss that we weather-strip the windows. He asked if I had ever heard of a factory window being weather-stripped. I told him I had never seen one but I was positive that it would correct our trouble, so we weather-stipped the windows and the results were even better than we had expected. The job cost about $400.00, and I feel sure that it paid for itself four times the first winter.

Now this does not only apply to a poorly constructed wood sash. It will pay you to watch the fitting of your modern steel sash when you build your new mill.

Another example. Some years ago a man came by renting a mending latch up needle for $35.00 per month. The cost of building such a needle would not be over ten cents. I could not see my way clear to pay so much rental for such a simple tool. I tried to do the job the same way with an ordinary latch needle, but it would not work, so finally I rented a needle and the first month we effected an actual saving in salvaged goods of $432.00, which was the rental for more than 12 months.

In this connection, did you ever see a dyehouse where the water stood on the floor in puddles all the time, and the company furnished the operatives with rubber boots to keep their feet dry, and in addition to this, paid the operatives a premium wage as extra inducement to paddle around in the water all day with lessened efficiency, not to consider the health hazard? In this case, would a well drained cement floor be an extravagance?

I heard of a man the other day who was heating his house with an oil burner which was controlled automatically and kept the house at a uniform temperature, It was costing him about $30.00 a month to operate it, and he decided that it was a luxury he could not afford, so he threw it out and went back to burning coal. In about two weeks his fire went down while he was away and the house got cold. The whole family got sick with colds and one of the children took pneumonia, and in the end, his hospital and doctor bills were $240.00.

A few weeks ago one of our knitters bought a cheap cotton pair of pants to work in. He wore them a couple of weeks and had them washed. On Monday morning when he put them on they had drawn up until they were too tight in the waist. He decided to wear them anyway. About 8 o'clock he coughed and the top button flew off his pants and landed in the catch bar of his machine. The catch bar jumped and wrecked the machine and the machine was closed down for the rest of the day for repairs. The loss to the knitter in production was about $8.00.

So these economic problems are always before us. Many modern mills maintain a medical department and employ a full-time trained nurse and give free medical treatment to all employees. They spend money for planting shrubbery and flowers and beautifying the lawn to cultivate in the minds of the employees an appreciation of the things that are beautiful. They spend extra money for interior furnishings, such as window shades, electric refrigerated drinking fountains, tiled wall wash-rooms, rubber-tired trucks and employ a corps of cleaners to keep the plant clean. The question arises: Do these things pay? My experience teaches me that they do. The big merchants of the country are spending millions to build bigger and better stores to display their wares. They send their buyers to our plants to inspect them to see if we are capable of turning out high grade merchandise. The impression made on the minds of these buyers by the appearance of our plants in a large measure determines whether we get the business.

A clean, attractive plant is less expensive than high priced salesmen, and in these days of keen competition sales keep the plants running.

In conclusion, let me say, if you can invest in a motionless, lifeless bronze eagle and set him on a pedestal in your plant, if he will be an inspiration to all employees who pass by to put forth a greater effort to do a better job, then don't hesitate to buy the eagle.

However these questions must be decided on their merits. Not every saving device that is offered you will do what is claimed for it. I kept a record one year of all of the saving devices that were offered me, and on the basis of the claims, if I had made use of all of them, I figured where I could make stockings for nothing and put a four cent postage stamp rider on each pair for return postage in the event the color was not satisfactory or some defect was found in the silk.

With love and best wishes from all the family, I remain, YOUR DAD.

THE USE OF BEMBERG YARNS IN SCHOOLS.

Bemberg yarns are being widely used in the textile and chemistry departments of southern colleges for demonstration and experimental purposes.

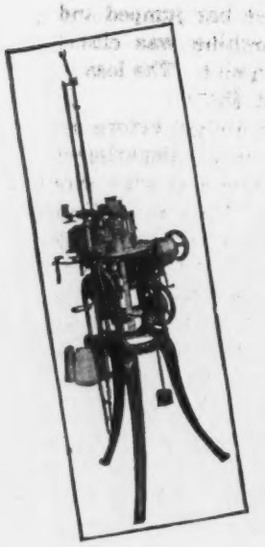
The Georgia School of Technology, Atlanta, has requested Bemberg yarns for the purpose of familiarizing students with the use and properties of the fiber. The yarns will be used for knitting seamless hosiery and circular knit underwear, for weaving and spinning and for laboratory dyeing, bleaching and testing, according to C. A. Jones, department of textile chemistry and dyeing.

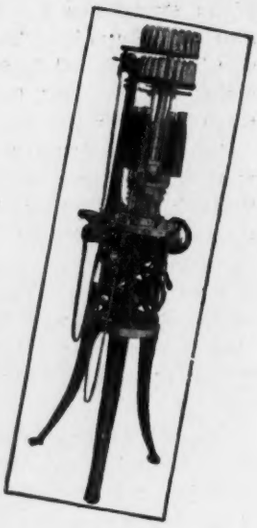
At the request of the school of textile engineering, Alabama Polytechnic Institute, Auburn, yarns and swatches of knit and woven goods have been sent for experimental use in their new textile building.

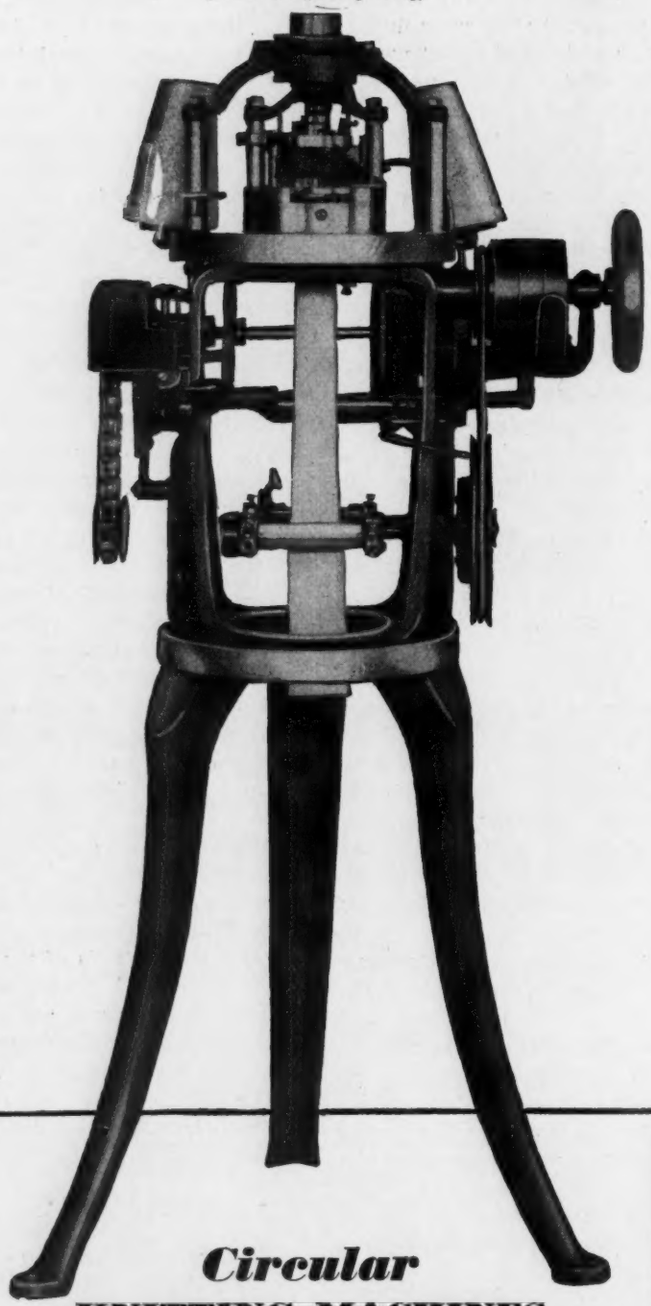
The Clemson Agricultural College, Clemson College, S. C., which has the largest enrollment of any textile school in the south, is also using Bemberg yarns in their weaving division.

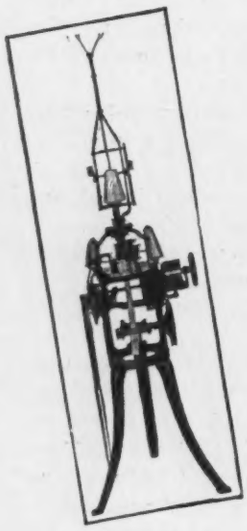
ALL TRUE-RIB

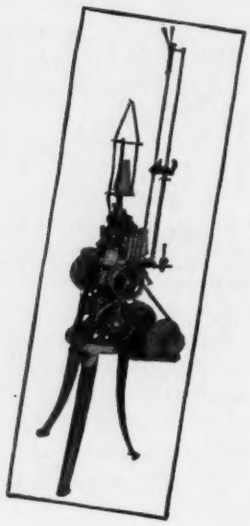
(Patented or patent pending)

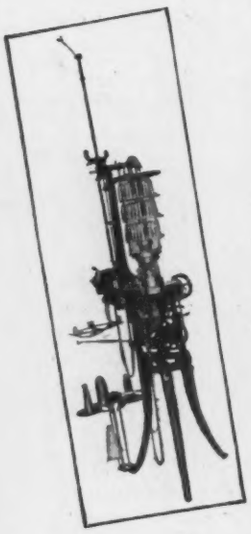


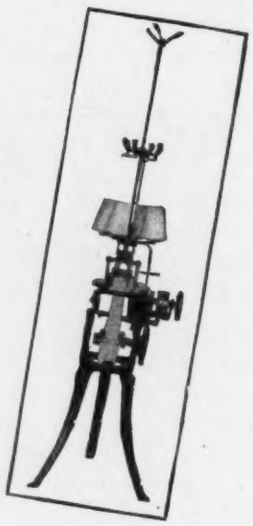












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THE FIDELITY UNIVERSAL RIBBER

Experiences Difficulty with Plaiting.

Your ideas as to how to prevent this trouble will be welcomed by the readers of this department.

EDITOR COTTON:

We have been experiencing a great amount of difficulty lately with our double sole plaiting. It just seems impossible for us to get the tension on our rayon necessary to give us good plaiting work. Our body yarn is 125 denier rayon, while we use 90s/1 mercerized in the double sole. This work is done on Model K, 300-needle machines.

I will surely appreciate some good knitter's advice as to how to overcome this problem.

CONTRIBUTOR No. 4895.

Causes of "Diamond" or Distorted Stitches.

Some opinions on this full-fashioned problem. If you would like to answer it, we would be glad to have you do so.

Editor's Note.—The answers below refer to a question published on page 92 of our November issue, reading as follows:

"We would like to have some opinions as to the causes of distorted or diamond stitches in the samples of knitted fabric we are sending, which have areas of distorted loops in them which spoil the even appearance. The fabric was made on a 45-gauge machine at 42 courses per inch. The silk is five-thread, Grenadine, conditioned by immersing in an emulsion and keeping in a damp room 24 hours. It runs over an emulsion roller before going to the needles. To correct this distortion we have tried various adjustments of needles and knocking-over bit heights; different take-up roller tensions; and different silk conditionings, but none of these was successful. Will you please advise us what else might cause this "diamond stitch" and what steps should be taken to eliminate it?"

The inquiry and sample were submitted to a number of men, whose opinions appear below:

EDITOR COTTON:

This is in reply to the inquiry of "CONTRIBUTOR No. 4872" with regard to the causes of diamond stitches, or distorted stitches in a 45-gauge Grenadine full-fashioned stocking. I have examined the sample sent along with this inquiry.

I believe this trouble to be purely one of improper setting or adjustments of the sinker head and needles. It is possible that slightly raising the knocking-over bit, or lowering all needle bars, will overcome the trouble. I believe, however, that the trouble is caused by the needles being out of alignment. This is borne out, in an examination of the sample, by the fact that distorted stitches show up most prominently in the center of the top or head of the machine. I would suggest carefully gauging the machine, first seeing that the sinker head is in perfect alignment with the top rail of the machine, then see that the sinker verge plate is perfectly aligned and properly adjusted. After this is done, I believe that it will be found that the needles will be out of line with the sinker head and functioning poorly. This can be shown by gauging needles, and needles out of line should be pliered back into correct position. I feel quite sure that if these suggestions are carefully carried out, the trouble will disappear.

CONTRIBUTOR No. 4875.

EDITOR COTTON:

I have carefully examined the Grenadine samples and am convinced that there is an unbalanced condition in the stitch formation. The knocking-over bits are either too low or the needles too high. The stitch formation in the hem looks as if the knocking-over lever was not set in the right position for knitting. In hooking up a new set of welts the knocking-over lever is set in the center to lower the knocking-over bits to make more room for the welt hooks for a few courses. Then the lever is shifted to throw the knocking-over bits on the high cam for straight running. Failure to shift the lever to the high cam will produce this effect.

Then again, 42 courses per inch is very loose knitting, which will tend to aggravate this condition. We put 46 courses per inch in a six-thread 48-gauge hem.

It is the custom with most mills to use a tram silk in the hem of a Grenadine stocking which will give a

We invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All accepted contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

If your mill can't make a profit with obsolete machines what will be your answer to the inevitable? Will you close your doors or modernize your equipment?

Let us show you how much less expensive the latter course will prove.

TEXTILE MACHINE WORKS
Reading, Pa.

The **"READING"**
Full-Fashioned Knitting Machine

contrast finish between the hem and boot as evidence that it is a true Grenadine and not a chemically delustered imitation. The tram silk is more adaptable to loose knitting necessary for hem fabrics.

I do not approve of the method used by "CONTRIBUTOR NO. 4872" for conditioning Grenadine. In fact, I don't think this method will prove satisfactory even on tram silk. The Grenadine silk is exceedingly hard to wet out, and the only method I know of that has proven satisfactory is back-winding, and even with this method the back-winding solution should be increased from 50 to 100 per cent and the moistening roller stepped up to the highest speed. In addition to this, it is well to use some penetrant in the wick boxes on the knitting machine.

All the defects in the hems of all the samples seem to be from the same cause, but the loading up trouble in the boot of the sample might be due to the catch bar being set too far forward, causing the points of the sinkers to interfere with the casting-off of the stitch.

CONTRIBUTOR NO. 4874.

EDITOR COTTON:

In reply to the inquiry of "CONTRIBUTOR NO. 4872" concerning distorted stitch in five-thread Grenadine hose, will say, the sample submitted is knitted at 42 courses per inch. This sample shows that the distorted stitch predominates in the welt. This stitch is usually caused by a combination of loose knitting, insufficient moisture and too much tension on the take-off rollers. Since all of these points have been considered, I would suggest as the next step that the catch-bar be brought forward a trifle. If cutting occurs when this is done, the presser cams will have to be relieved slightly on the dividing point. The samples also show several slight streaks, which is due to rough sinkers. It may be well to buff all the sinkers and needles on this machine, as this will help to form a clearer stitch. The sample also shows more distorted stitches in the center than on the ends. This may be caused by the roughness mentioned, due to the fact that the center needles and sinkers knit almost constantly, while the outside needles and sinkers are idle at times due to narrowing.

The writer would also suggest that the yarn be immersed longer and kept in a damp room for a period of 48 hours, since it takes longer to condition Grenadine than ordinary tram silk.

CONTRIBUTOR NO. 4880.

EDITOR COTTON:

I note that "CONTRIBUTOR NO. 4872" is having trouble with the welt of a Grenadine stocking knitting a distorted stitch or what he calls "diamond" stitches.

I have examined the samples submitted very closely and also note that he says that the silk is immersed in an emulsion, kept in a damp room for 24 hours, and run over an emulsion roller before going to the needles.

From the examination of the sample and the information received by the contributor on the conditioning of the Grenadine silk before knitting, I am of the belief that the cause of the distorted stitches in the welt is because he is putting too much moisture in the silk.

He may question this by saying that he does not have this trouble in the leg part of the stocking. The reason that this does not occur in the leg part of the stocking is that, first, the leg part is knitted much tighter by having more courses per inch and, second, that after a welt is turned the welt wire and straps or elastic do not pull as hard on the fabric as when the welt bars are pulling the fabric during the knocking-over operation and the knitting of the welt.

My experience with Grenadine has been that too much moisture will not produce good fabric and all that is required for moisture in Grenadine silk is what moisture the silk will collect in winding over an emulsion roll on a winding machine. It is policy to wind the silk on cones that will last not over 7 or 8 hours on a knitting machine so that the silk is used up before it becomes too dry. A felt pad moistened is all that is necessary for the silk to run over before entering the needles.

Running the silk over the emulsion roller before entering the needles is where I believe is his trouble, as this gives the silk too much moisture and results in the stitches becoming distorted.

To overcome his trouble I would make the following suggestions:

First of all, check up the straps or elastic webbing on the rollers. If using a plain strap without elastic, I would suggest that a set of elastic straps be placed on the machine. The elastic webbing should not be too stiff, otherwise too much weight must be carried and too much weight will cause distorted stitches.

Second, I would suggest that he tighten up the welt to at least 44 courses per inch. The contributor states that the welt is made 42 courses per inch and in stretching the welt I noticed that the welt is quite elastic and could be made tighter. The tighter the stitch the less trouble with distorted stitches.

Third, I would suggest he use the least amount of weight possible on the strap rollers, as too much weight will pull the fabric too hard and cause the stitch to become distorted.

Fourth, I would suggest that he stop immersing the Grenadine silk in an emulsion and also run the silk over a moistened felt instead of an emulsion roller before the silk enters the needles. In other words, the contributor should watch that very little moisture is in the silk before it enters the needles and it is better to have the moisture in the silk on the cone rather than have it moistened by going through an emulsion before entering the needles.

I feel sure that the suggestion I have made will help the contributor in overcoming his trouble and finally will say that so-called "diamond stitches are caused mainly by excessive moisture and here is where one must look for the trouble.

CONTRIBUTOR NO. 4876.

EDITOR COTTON:

This is in reply to the question of "CONTRIBUTOR NO. 4872" in regard to distorted loops in the welt of 45-gauge full-fashioned fabric, made 42 courses per inch with 5-thread Grenadine silk which was condi-

tioned by immersing in an emulsion and keeping in a damp room for 24 hours, and which runs over an emulsion roller before going to the needles. Samples showing this defect were submitted.

We believe that this trouble is due to: (1) Machine running at too high a speed; (2) Too many weights on; or (3) silk possibly too damp.

With a machine running at high speed there is a tendency for the loops to jump off the welting bar and this is prevented by adding additional weights. This increased tension comes particularly around the middle of the bar, distorting the stitches at this point. The selvages on both sides tend to decrease the tension at the outer ends of the bar and there is no loop distortion here.

Another suggestion might be that the cam rolls do not follow exactly the outline of the presser cam due to the high speed, or possibly the springs are weak and cannot hold the roll against the cam outline.

CONTRIBUTOR No. 4877.

Which is the Best Back-Winding Solution?

Does soft water cause more rust than hydrant water? What are your ideas on these questions?

EDITOR COTTON:

I would certainly like for some full-fashioned knitters to tell me whether standard make emulsions mixed with soft water is better for backwinding silk than soluble olive oil mixed with regular hydrant water. Does soft water cause more rust on the machines than regular hydrant water?

I have heard this subject discussed quite frequently, but so far I have not been able to reach a satisfactory conclusion. I will surely appreciate seeing some discussion of this in an early issue of COTTON.

CONTRIBUTOR No. 4905.

Preventing Streaking and Tucking.

EDITOR COTTON:

In a recent number, in "KNITTING KINKS," "CONTRIBUTOR No. 4832" asked for discussion on methods of preventing streaking and tucking on 220-needle Model K machines, using 70s/2 mercerized yarn.

If these streaks are made up of uneven width of wales, they may be caused by too much space in the needle race, and probably can be corrected by moving the left-hand side cam as close to the left-hand stitch cam as possible without binding the needle butts.

The tension may be too loose in the garter and boot, which sometimes causes streaks. It may be advisable to add length and tighten. We should keep in mind that 70s/2 is on the light side for standard yarn on 3½-inch diameter, 220-needle. A heavier yarn will fill out the stitch much better. The cylinder heads should be cleaned thoroughly each month to give free movement to the needles and sinkers as a preventive of streaks. Worn inside sinker rings may be a factor. The needles should be straight in the cylinder.

Tucking may be caused by a lack of sinker pressure on the left-hand side in the sinker lead. Sinkers should be adjusted at the bumper screw to push in to their furthest position just as the needle appears at the level of the sinker. It is difficult sometimes to prevent tucking on machines that are not equipped with new style sinker heads. Tucks are often made because the right-hand stitch cam is not full enough to raise the latches through the stitches just before the needles take the yarn at the throat plate. Several styles of stitch cams are available, some of them shaped especially to raise the needles sooner and to a higher level. Care should be taken that the needle butts are not raised into the top center cam.

CONTRIBUTOR No. 4867.

High Pressure Lubrication for Full-Fashioned Machines.

Readers with experience are urged to report their results with this idea.

EDITOR COTTON:

I would like to know if any of your readers have tried the high pressure system of lubrication on full-fashioned machines. We have tried it for several weeks and have found it very satisfactory. A lot of the undesirable features, such as oil on the goods, oil drip on the floor, etc., are eliminated.

I would like very much to hear from some others who have tried this and learn of their opinion concerning it.

CONTRIBUTOR No. 4900.

Backwinding Versus Direct Knitting.

EDITOR COTTON:

I would like to offer our experience with regard to knitting direct from cones of silk that have been conditioned. I do this in response to the question from "CONTRIBUTOR No. 4724" which you published in the May number. This man wanted some discussion as to the advisability of eliminating backwinding and knitting silk direct from conditioned cones.

We use the following method and apparatus in conditioning silk which is to be knit without backwinding.

For conditioning cones preparatory to knitting, the material is subjected to the effects of moist air and the following procedure is recommended:

After fitting a room of suitable size with a commercial type of air conditioner for this purpose, and properly connecting the machine to steam and water lines, install a number of non-rusting metal racks upon which silk is placed during the process of conditioning.

The steam and water controls on the humidifying machines should be regulated to furnish a temperature of 85 to 95 degrees, F. and 90 to 95 per cent humidity. The humidity can best be checked by using a sling psychrometer.

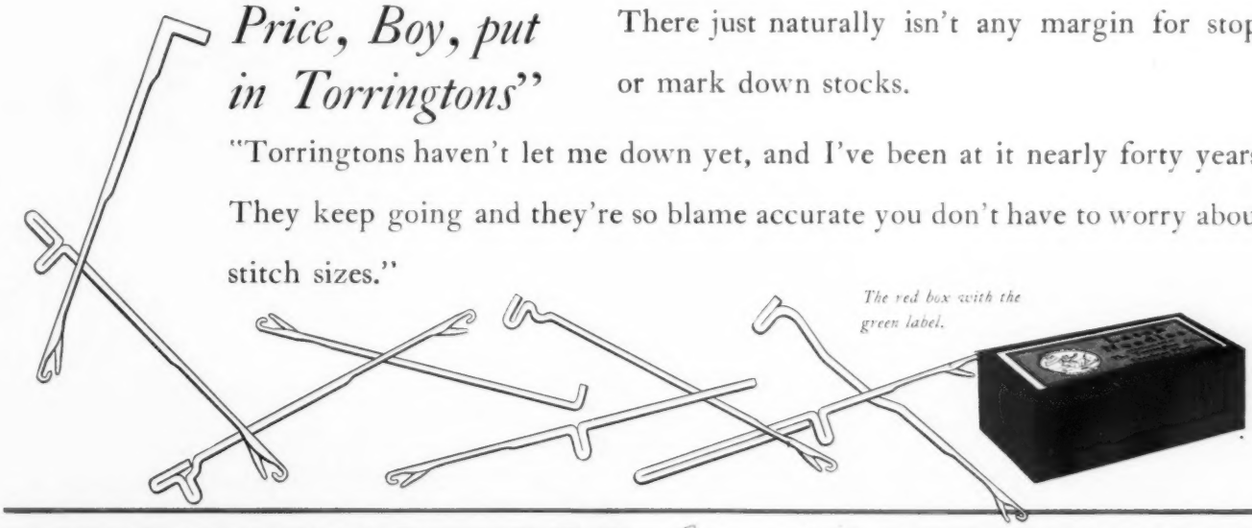
Under our conditions, as described, silk that has been prepared for knitting purposes by the throwsters is placed on cones in the storage racks, and allowed to remain in the conditioning room 24 to 48 hours; the length of time depending upon the hardness and size of the silk thread. The conditioned silk is knitted on full-fashioned machines in the custo-

The Old Knitter Talks

"When it's Quality at a Price, Boy, put in Torringtons"

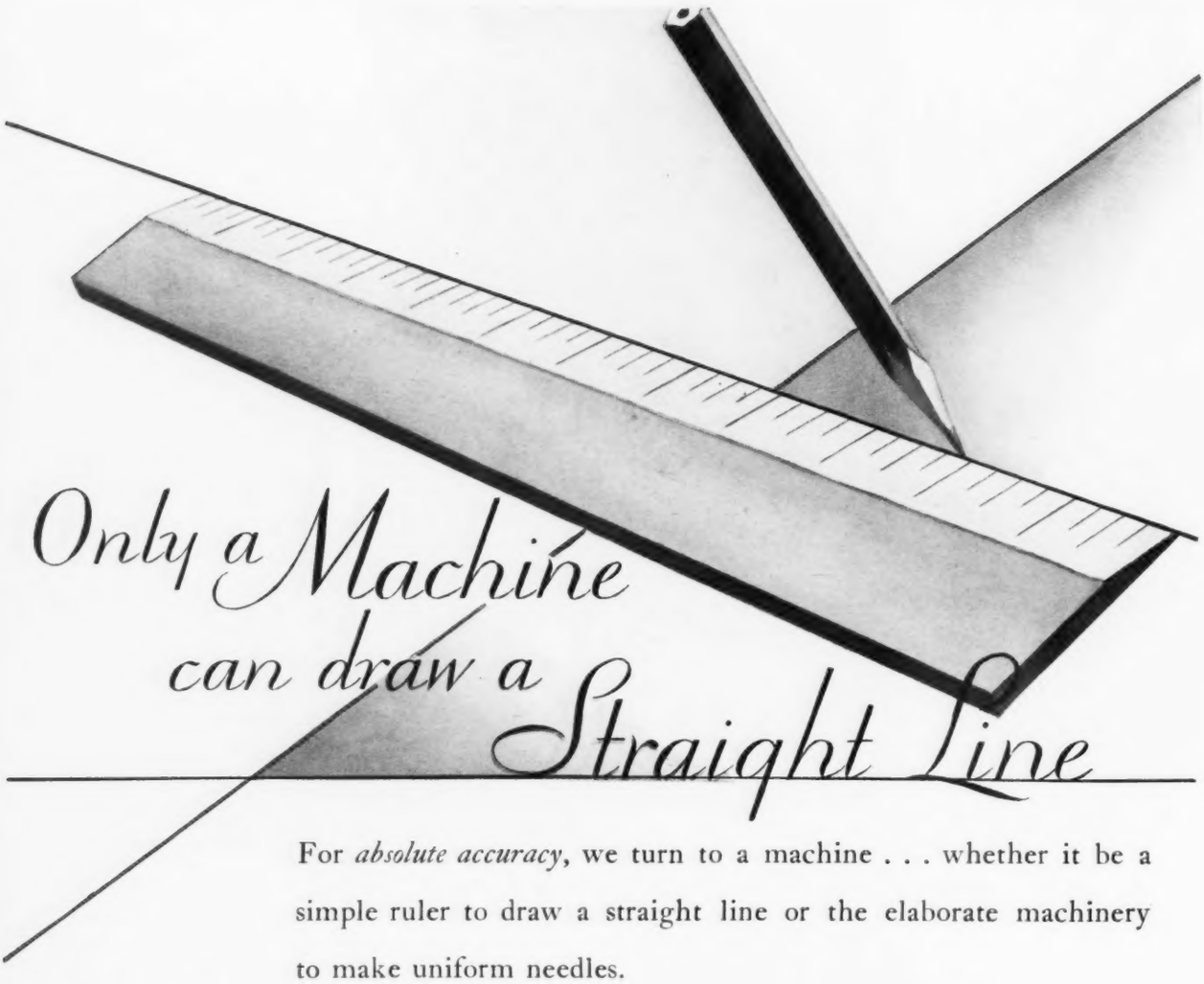
"In times like these, you've got to keep the machine running. And the stuff has to be *all* firsts. There just naturally isn't any margin for stops or mark down stocks.

"Torringtons haven't let me down yet, and I've been at it nearly forty years. They keep going and they're so blame accurate you don't have to worry about stitch sizes."



The red box with the green label.

TORRINGTON *Latch* **NEEDLES**



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Unvarying dimensions . . . perfection hour after hour . . . Torrington Full Fashioned needles are turned out with that machine accuracy which is your assurance of unfailing uniformity in the knitted fabric.

The red box with the green label. Packed 1000 to the box. Each box contains 10 packets of 100 needles wrapped in glazed paper.

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Spring Beard Needles

mary manner by running the thread through a damp wick on the knitting machines.

At the present time, we have found that silk up to five thread, 13/15 denier, can be conditioned very successfully, thereby eliminating any backwinding. Experiments with 7-thread and heavier numbers point to the possibility of applying this method to all silk.

I might say in conclusion that incoming shipments of silk are placed in a cool storage room without humidification and only before using are placed in the conditioning room.

CONTRIBUTOR NO. 4796.

Tints Causing Off-Shades.

Says this is more common with the one-bath method. Tells how trouble can be overcome.

EDITOR COTTON:

One of your recent correspondents seems to be suffering from the same complaint that most dyers of hosiery today are troubled with: undesirable colors from throwster's tints.

Silk coming from throwing plants have of late years been colored with what they call "fugitive" colors that are supposed to come down completely in the boil-off. They are put on the silk in the soaking bath to keep the different lots of silk separate. When the proper dyes are used and discretion exercised no harm should come from them, but sometimes the tinting is carried too far and some tinting is done with dyes that are far from being fugitive, and then it is that trouble starts.

Some of the colors that are said to be fugitive come off the silk and go on the cotton where they are held tenaciously to disarrange the shade and a bad union is sure to result. Others will stain the boiled-off silk so bad that a revision of the dyeing formula is necessary to get a match to pattern. Sometimes the silk is colored so deep that the boil-off bath looks like a dyeing bath.

During the last few summer seasons when light shades have been in prevalence this tinting problem has been felt by all dyers of hosiery and it is quite remarkable that so little complaint has been made and no more cry been heard about this unnecessary condition.

While no hosiery dyer is immune from this trouble, those suffering most are the dyers who have adopted the method of dyeing in the degumming bath. With the unknown tints contaminating the bath their formulas become erratic and it is vexing in the extreme to have to wrestle continuously with dyebaths containing dyes that were not intended to be there.

The best solution in order to get rid of offshades caused by tinting is to scour all goods in a boiling soap bath containing 5 to 8 per cent soap or boil-off oil according to the condition of the water supply, using the smaller percentage in soft water and the higher for hard calcareous water, adding about two per cent of some modified alkali for about 30 minutes; then dump the bath, which will now contain all tinting and other impurities like softeners, lubricants, etc., that are in the grey goods. Then prepare the boil-off bath and proceed with the work in the usual way. The time and material that seems wasted will be amply repaid in better, cleaner and more level dyeings.

FARBER.

Answer to Question on Loose Drum Cams.

EDITOR COTTON:

I have read with much interest a question recently submitted to "KNITTING KINKS" by "CONTRIBUTOR NO. 4617." In his question he stated, "We have always had more or less trouble with the drum cams coming loose from the drums of our machines. These cams are the ones that receive the most wear, such as, on the Scott & Williams machines, set up cams, transfer cams, shear cams, etc." He wanted to know if there wasn't some little "kink" that some of us are using that would help him.

On a Scott & Williams Model K machine, for instance, when the machines are new very little of this trouble is had because of the fully threaded screw holes on the drum and the new screws. They hold the cams very well. But when the fact is taken into consideration that the drum on a knitting machine makes one revolution every five or eight minutes for every hose, depending of course upon the style being

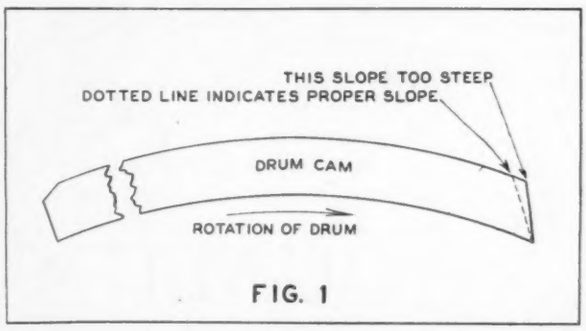

FIG. 1

made, for a full eight hour day, it is easily realized that the amount of wear which the drum cams receive from the thrust rods, which work on the cams, is very great. In due course of time as the machines begin to wear, the drum cams begin to gradually loosen. This loose play in the cam, as the thrust rod comes in contact with it, gradually wears out the threads in the drum, which causes the screws, even if they are tightened, to fail to hold as securely as they did when new.

Another good cause for drum cams coming loose is improper front slope of the cam as it comes in contact with the thrust rod. When the front slope of a drum cam is too steep, as shown by Fig. 1, the amount of pressure put on that cam by the thrust rod is enormous, especially so when the thrust rod has a stiff spring attached to it.

The transfer cam generally gives considerable trouble in becoming loose. This is due to the strain this cam receives from the thrust rod while going through the transfer change. This cam has only one 6/32-inch screw which holds it to the drum. By drilling another hole on the first step of this cam, as shown by Fig. 2, I have been able to get much better results.

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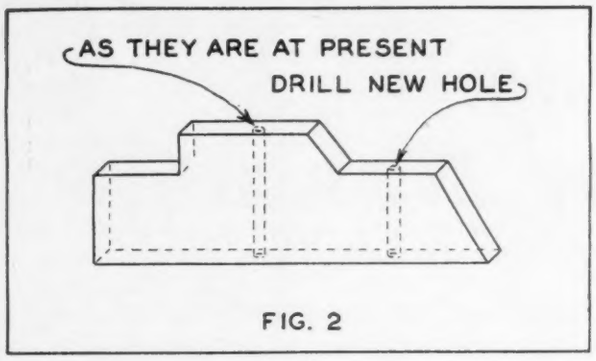

FIG. 2

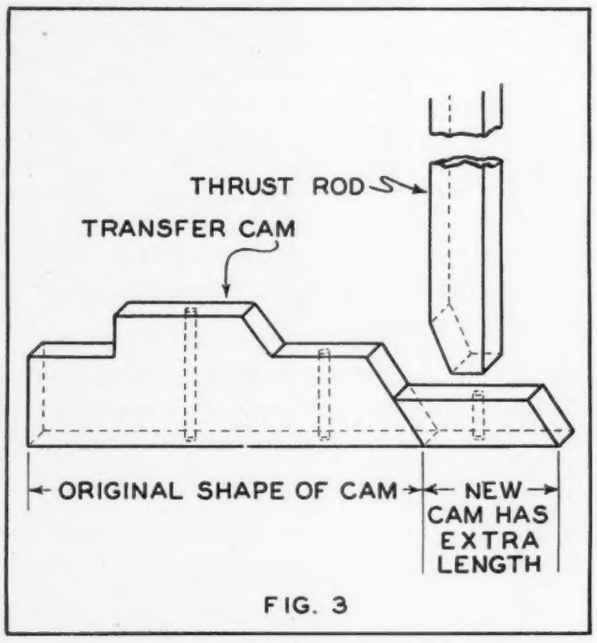

FIG. 3

Another good method of holding the transfer cam is to make a cam of extended length, as shown in Fig. 3. This added length allows an extra screw hole and also takes away one half of the strain placed upon the cam by the thrust rod, as the thrust rod is one half the distance up the front slope, so to speak, before it actually begins to make the transfer. The only other effect this extension has on the machine is that the transfer set up lever is in half way, which raises the long butt needles, but there is no harm in this.

The shear cams on a knitting machine also receive considerable wear. This wear occurs mainly on the back part of the cam and is caused by the thrust rod. Although these cams do not become as loose as some of the other cams on the drum, experience has taught me that it pays to adjust these cams back and forth to compensate for the wear that takes place, or, when the occasion demands, either lengthen or shorten them. I do this by drilling a ¼-inch hole in the drum at every screw hole where a shear cam is fastened and inserting an extra 6/32-inch lag screw through the shear cam and the hole drilled in the drum. I then take a short length of 3/8-inch drum stock about 1-inch long and drill a 6/32-inch hole in the center, which allows this short piece to be placed on the inside of the drum and

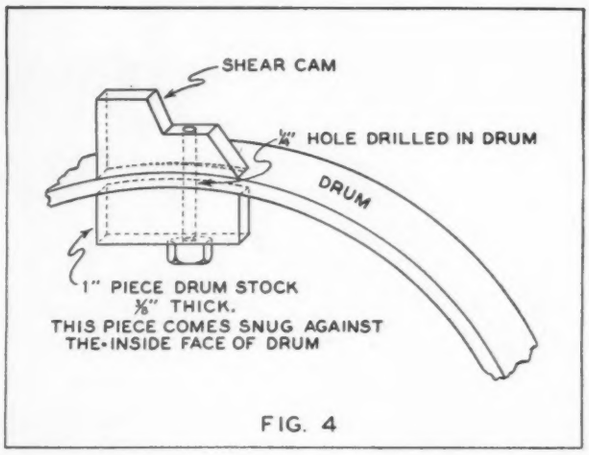

FIG. 4

fastened by means of the 6/32-inch lag screw which goes through the shear cam.

It can be seen by referring to Fig. 4 that the extra large hole allows the shear cam to be adjusted forward and backward, and this short length, which was inserted inside the drum, holds the shear cam in place. I have found this very practical and the idea can be carried out on any drum cams which require constant moving backward or forward.

Unnecessary springs on some of the thrust rods and too stiff a spring on others is another cause of loose cams. The purpose of a spring is to insure the pulling down of the thrust rod off the cam after it has made the necessary change. If the thrust rods work freely up and down as they should, very little spring is needed to perform this task. It is a known fact that machinists will at all times tighten up a spring without clearly ascertaining at the time whether or not the thrust rods are really binding. It would only be a short time before loose cams would be the result of this practice.

CONTRIBUTOR NO. 4755.

Comments on Back-winding Solution.

Some ideas as to what will prevent sediment in the solution. Your ideas will be welcome.

EDITOR COTTON:

We have seen the question on page 1395 of the October number of COTTON with regard to difficulty with a back-winding solution on full-fashioned, signed by "CONTRIBUTOR NO. 4842." This man stated that he uses three pints of silk oil and two pounds of olive oil soap, dissolved in 52 gallons of water; this solution then being mixed with a solution of five pounds of glycerine to 20 gallons of water. He reported that the sediment collects in the bottom of the jar and that this is passed along in great part to the first trough. The sediment does not show up on the third trough, he said, but the yarn passing through the first trough is not treated anything nearly as it should be. He said that certain parts of the yarn collect the precipitate of the soaking solution, which of course causes this portion of the yarn to remain much wetter than the remaining portion; and he also said that the glycerine curdles upon the water in spots, and that it goes upon the roll in the same way.

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Adv. 378

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In answering this, I might say that he can eliminate the glycerine as a source of his trouble, outside of stickiness. Glycerine is thoroughly water-soluble. In my opinion his trouble is caused by the soap not emulsifying the silk oil. If he will make a mixture of soap and silk oil, and leave it in a bottle for a few days, he will notice, I believe, that a thick creamy substance comes to the top. This means that a separation has taken place. Equipment for manufacturing emulsified oil is in my opinion necessary in order to secure an emulsion that will stay thoroughly mixed.

Regarding his statement that the glycerine curdles in spots and accumulates on the roller, in our opinion this is not the glycerine curdling. We have found that this can be caused by one of two things. First, he may be using hard water and the alkali from the soap combined with the fat of the silk oil will cause a metallic soap which will cling to the rollers. Or, there may be small rust spots on the roller. This rust will combine with the fat of the oil and cause a metallic soap to form there. This of course can be easily checked up. It is necessary only to scrape off the spots where this accumulation occurs and see if there is a very small rusty part on the roller underneath.

CONTRIBUTOR No. 4890.

Preventing Streaking and Tucking.

EDITOR COTTON:

I am sending along a few thoughts, which I hope will prove of some value in helping "CONTRIBUTOR No. 4832" overcome the difficulty he seems to be having with streaking and tucking in the loose part of the stocking. In the October issue of COTTON, he stated that he was having a lot of trouble of this nature on his 220-needle Model K machines where he is using 70s/2 mercerized yarn.

It may be that "CONTRIBUTOR No. 4832" is trying to make his stocking too loose. It is possible to pass the limit, and just as soon as this is done, trouble is the result. I would suggest that he add more links in his chain to lower his cylinder, or put in 48 gauge, No. 508 latch needles in place of the tucking needles he is now using.

If he has his cylinder too high, it might be a good idea to take the left hand stitch cam out and put in a new one. If this does not make the fabric knit loose enough, it will then be necessary to add links or change the needles. If, however, the new cam does allow the fabric to be made loose enough to permit lowering of the cylinder, then, of course, the conclusion is reached that the old cam was too short.

As a means of preventing streaking, I would examine the sinkers to see if they are worn, and if such a condition existed, I would remove them immediately. The first thing to do, though, is to take the cylinder out and pull the needles down low enough to allow thorough cleaning of the lint from the grooves on the outside of the cylinder between the brass and cylinder. Lint becomes packed so hard here that the sinkers are not permitted to go in as they should.

Too much friction on the needles due to the brass being bent or slots broken out around the outside of

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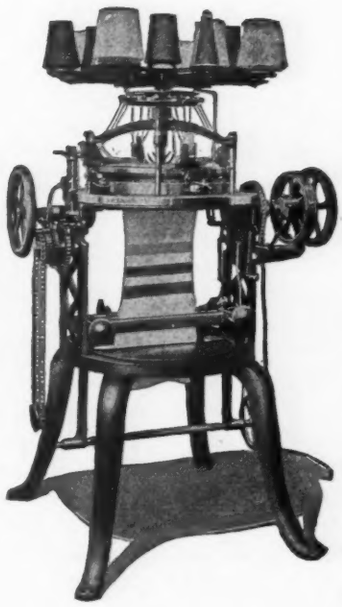

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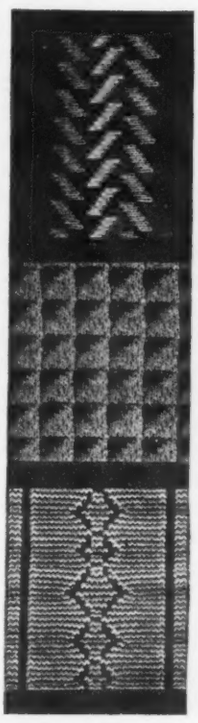

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the brass will cause streaked work. Where such a condition is encountered, a new brass should be put on.

CONTRIBUTOR NO. 4918.

EDITOR COTTON:

I recently saw a question in COTTON regarding streaked work on Scott and Williams machines. There are several things that will cause this. If the cylinders are allowed to become clogged up with lint, streaking often results. If the sinkers become mixed, which very often occurs, the chances are streaking will be noted. Some sinkers have a fuller throat than others, thus the yarn is carried in further by these and this will cause a loose stitch.

Sometimes when all of the above has been checked over and streaking is found not to be the result of any of these causes, it may be possible to find the cause due to the way the needles are striking the end cam, or the raise cam as it is at times called on the Banner machines. It should be seen that the needles are striking the end cam as soon as they go under the point of the running stitch cam. If this cam is well fitted, tight and loose needles will all pull the same stitch, and this will give an even stocking.

This same contributor wanted to know the cause of tucking. I presume that he wanted to know what causes tucking in various parts of the stocking on improper needles. That's what I will try to cover.

Tucking is caused by needles holding the stitch cam more than one revolution of the machine. If the floating stitch cam is going too low when in action, tucking is liable to occur on needles other than the proper ones. This is often overcome by adjusting the tucking lever. Sometimes the floating cam will become loose, which will also cause tucking.

If the tucking needles are tucking in the hem, or in the heel and toe, the cause of this is usually due to the running stitch cam being too short or loose.

The bumper screw should be run in just as far as it is possible to run it and yet not have the sinkers project in too far and interfere with the yarn as it is feeding in to the needles. This will permit the cylinder to be run down lower, which will prevent tucking.

CONTRIBUTOR NO. 4926.

Causes of "Hairy" Needles.

EDITOR COTTON:

I noticed in the July 1930 issue that a friend of ours is in trouble. "CONTRIBUTOR NO. 4718" states that he is having trouble with "hairy" needles on his 70-gauge, 280-needle, 3½-inch machines.

This is nothing new by any means. All of us who have been in the game for even only a reasonable length of time have experienced it. However, regardlsss of the frequency of the occurrence of this trouble, it is impossible for us to put our finger on it each time it crops up. In the large majority of cases it is necessary for us to spend many weary hours with it before we are able to remedy the defect.

I will mention some of the things that I have found to be of a wonderful aid in keeping me away from this trouble. I have found that running the body yarn in the mouth piece as near the left side as possible will prove a big help. This will prevent so much drag being placed upon the yarn, which will naturally prevent a large number of the small fibers of the yarn being cut. I have also found that hollowing my stitch cam out so that the needle will be drawn down just as the yarn is in the corner of the latch will prevent a large number of cut fibers, and this, of course, prevents a fuzzy streak, and this is a streak that "CONTRIBUTOR NO. 4718" speaks of as being caused by a "hairy" needle.

I have recently started using a needle that has, instead of the customary oval shaped latch opening, a V-shaped latch opening. Since adopting this needle, I have found that my trouble with fuzzy streaks has been reduced considerably. It might not be a bad idea for our friend to give this type needle a tryout.

On several different occasions where we have experienced fuzzy work, we have found that it was caused by running yarn that was too heavy for the size of the machine.

I hope that some of my suggestions may prove of some value to your contributor.

CONTRIBUTOR NO. 4896.

Among the Knitting Mills

ARCHER HOSIERY MILLS, Columbus, Ga., are planning a 12-month expansion program at a cost of $200,000. The plans call for a new brick and steel building for new machinedy for the manufacture of full fashioned hosiery. Contracts have been awarded to A. K. Adams of Atlanta, and Lockwood Greene Engineers, Inc., textile engineers.

A. C. Whitehead, of Valdosta, Ga., recently purchased property in Camilla, Ga., on which he will erect a knitting mill. It is announced that machinery will be installed immediately upon completion of the building. .

Golden Belt Mfg. Co., Durham, N. C., recently completed a small addition to accommodate laboratory equipment. An additional dyeing machine has been installed by the Smith Drum Co.

Pilot Hosiery Mills, Valdese, N. C., are reported contemplating installing new humidifiers.

Thomas D. Cooper, Elizabeth L. Ellis and Callie Griffith Coxe have organized the Allied Hosiery Mills in Burlington, N. C.

Cramwell-Lee Hosiery Mills, Pikeville, Tenn., are now operating on a full-time schedule, producing 8,000 dozen pairs of hose monthly. Additional machinery will be installed to double production, and a dyeing and finishing plant will be added, which will enable the company to ship finished products.

Elder Hosiery Mills, Burlington, N. C., have secured mill building which will be used for manufacturing both full-fashioned and spiral knit hosiery. The initial equipment includes 30 circular machines and 12 full-fashioned machines.

Star Hosiery Mills, Star, N. C., recently began operations with 25 Scott & Williams knitting machines and 9 loopers. Dyeing and finishing equipment has also been installed.

Crowell-Lee Hosiery Mills, Pikeville, Tenn., are installing dyeing and finishing plant and additional machinery. The production capacity is 8,000 dozen pairs of hose monthly.

Hungerford & Terry, of Philadelphia, will install a filtration plant to remove iron and anti-chlor from chlorine at the Virginia Maid Hosiery Mills, Pulaski, Va.

Richmond Hosiery Mills, Daisy, Tenn., have installed 55 Banner split-foot machines, for making half-hose. This gives the mill a total of 400 machines. The mill is completed and running full time day and night. About 500 people are employed.

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The KNIT GOODS MARKETS

IT WAS A QUESTION among the older generation of manufacturers and distributors of full-fashioned hosiery when the curtain was lowered on 1930 whether the end of any previous year was so devoid of data upon which to predicate a prophecy of what might be in store for the industry in the succeeding year. That drastic changes among producers will be witnessed before deflation of values will have gone to its finish was not doubted during two or three weeks of developments in December. Nothing has since occurred to make the situation appear less doubtful.

There is one general proposal to which there is heard accord from those among manufacturers who are conceded to be the better informed and more nearly able to point the way to survival. It embraces super-efficient mill management, modernized modern equipment—1930 models improved; faculty to obtain maximum elimination of extravagances with minimum dislocation of the machinery of successful marketing organizations, the re-establishing of proper values where they have been disturbed by floods of wilfully cheapened products, and a lifting of and adherence to standards for reinstating full-fashioned silk stockings as a commodity in the broad measure of respect they enjoyed for many years—until at the behest of an element among buyers for the retail trade many manufacturers produced goods to fit a price that, while it yielded them but a pittance, was susceptible of a mark-up that, in most cases, returned abnormal profits to a considerable element among merchants.

The executive of a moderate size mill in eastern Pennsylvania that was busily engaged during the greater part of the 1930 period of market depression is credited among trade acquaintances with having solved the problem of how to obtain profits from the manufacture and sale of hosiery in a market of the character such as has existed. While this executive probably has an advantage in plant location, operatives in his employ receive larger weekly payments than those in numbers of plants where higher piece work rates prevail, in support of which premise he submits for inspection original records. His explanation is: "Every one of our knitters is thoroughly trained in efficiency. Our rate of pay per dozen stockings is, we are told, much lower than in many mills. A knitter must be a skilled mechanic to earn a substantial wage. A careless, indifferent knitter or one who does not know the fundamentals of making a machine return a good wage for good workmen would not be willing to work in our mill—he could not earn enough to pay for his food and clothing. With efficiency and speed we get maximum production and the lowest per cent of irregulars reported by any manufacturer with whom we have made comparisons of results. Mills that follow this plan will continue to make and sell hosiery profitaby, in as keen competition as we had in 1930."

The manufacturer outlining his views as to the class of mills which, he holds, will weather the storm and, contemplating a long pull, profit by bitter experiences, lays much stress on the use of machinery that is as modern as the latest models, and the care given to the upkeep of the machines, a function in which his type of knitters are schooled and made to understand the meaning of discipline. In his mill the task is perhaps a hard one for the beginner, but his labor turnover is pointed out as evidencing its future quality.

This mill executive's word picture of the successful manufacturers during the remaining months of adjustment will not interest those who have enjoyed comparatively plain sailing on the probably stormiest seas the full-fashioned industry, as a whole, ever encountered. There is a larger group in which the picturization may leave the germs of a solution of pretty nearly everybody's problem.

During the severity of the depression in textiles following the termination of the World War a nationally known trade organization authorized for publication in the trade press a statement that "the American hosiery industry was nearer complete stoppage than at any time in its history." That will be recalled, especially in seamless quarters, as being very close to the hard truth. There was, it was admitted, no precedent for the causes leading up to such a condition. Then, as in 1930, there were large surplus stocks which could be moved into distribution only at a severe sacrifice. The deflation of values consumed less time than did that process in 1930. Again are the market factors without precedent from which to get bearings for 1931. The unemployment situation in general may be a more serious matter now than it was then, but that will not retard rehabilitation of industry.

Necessarily, there looms the question whether recovery now will be as sudden and rapid as it then was. With any material reduction in the numbers of unemployed, recovery should be more speedy, for, as is pointed out, confidence will gather fast with only slight additions to the army of employes. The hosiery industry last year was not as near complete stoppage as in the postwar depression period. It entered the recuperative period wtih the swing from fateful 1930.

How long will be required for convalescence before the patient can be pronounced restored? Inventories which this month will enter largely into the matter of credit will speedily determine the fate of numbers of manufacturing establishments. They either will improve upon their policies of the last half of 1930 or may pass out of the picture of activity before the end of the first half of 1931, in the opinion of some persons whose judgment usually is held to be worthy of consideration. Accepting this none too exhilarating view, survivors of the depression in the full-fashioned hosiery industry may be expected to be well advanced toward a normal status under a readjustment practically completed, with the next turn of the wheel depending upon the extent to which the singed shall profit from

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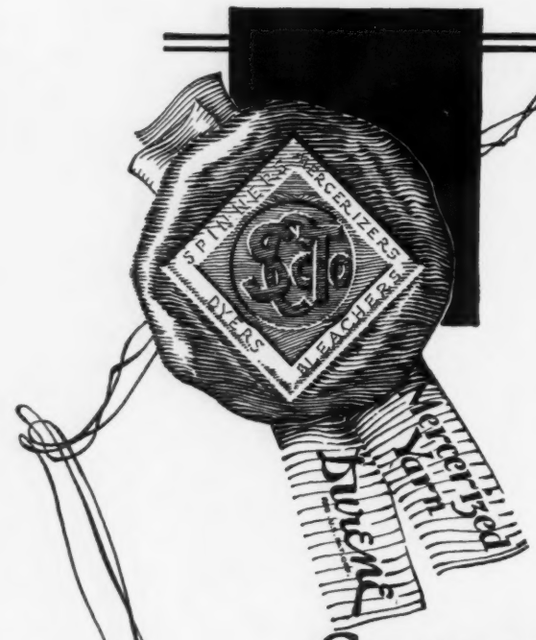

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the experience of having been through the fire. For the hosiery industry, the turn of the road appears to present no more complex problems than had to be met when it started on the road to recovery from the post-war depression. Those who came through that ordeal on all four should, it is held, be the better equipped for wrestling successfully with the legacy left by 1930.

Price Disparity Indicates Some Distrust as to the Market Structure's Bottom

THE REBUILDING of the markets for American hosiery starts with the bottom of the price structure badly punctured. For some little time price has been a matter of individual opinion—an unknown quantity —as was made apparent in the price tags displayed at many of the special sales of leading department stores, as well by the disparity in manufacturers' quotations. A few illustrations will serve to emphasize the point.

One of the several women's ready-to-wear and specialty shops of a nationally known corporation ran within a month its second sale of four-thread silk 45-gauge first grade hose, with modern picot tops, for one dollar a pair. The success of the first sale was the inspiration for the second. The stockings bore no manufacturer's brand. Simultaneously with this repeat offering, a nationally known brand of picot top all-over silk 45-gauge was being offered regularly, in a store rated exclusive, for $1.95, which represented around one dollar decline from the regular price of a year before. The branded line had only a routine sale, attracting no more attention than any item not specially priced or carrying no specail feature, whereas the dollar a pair 45-gauge, unidentified, was taken in quantities of as many as one dozen pairs and more, in instances. Another dollar stocking was of four-thread silk, 42-gauge, described, however, as made with cradle foot and modified French heel; and still another, of 42-gauge, was of seven-thread silk. Hosiery from a widely known northern mill whose quotations to jobbers is $8.50 a dozen was featured by a leading department store at 85 cents a pair.

The only thing irregular in connection with the several sales referred to, all during the more active pre-Christmas shopping, was the price—there was no doubt that the stockings were regulars. During the same period there were, among mill offerings, seven-thread silk 39-gauge of standard construction for $4.50 a dozen and all silk five-thread 42-gauge irregulars for the same price. A western buyer was actively in the markets for 42-gauge irrgulars of this description, for which he proposed paying no more than $4 a dozen. How he fared was not disclosed.

Hosiery prices last month had descended to a level where they were monotonous, as described by some store managements, making the retailing of silk full-fashioned goods a hard game for department heads, especially in establishments maintaining so-called popular prices and operating under the divisional merchandise manager plan. In such stores, according to the tales of woe as related by a few experienced buyers, the department managers were unable to show hosiery profits satisfactory to the divisional merchandise man. The more desirable distress lot stocks had been pretty well cleaned up as the year waned and much of the remaining surplus was not of the character that stores jealous of their reputation like to exploit. So, beginning with December, buyers found selections were more restricted and distress prices named less frequently. The time had come, too, when new low prices in the stores had lost their appeal. Department heads reported a satisfaction with the dollar price that augured not well for lower figures, except for established brands, and it will be recalled in the trade that two mills distributing to retailers which are nationally known for their brands were the first to announce, formally, a four-weeks shut down of their plants. This served to broaden somewhat the outlet for the unidentified of accepted standards. Much of the nationally known branded from some of the larger producers is expected by some leading factors to figure conspicuously in the department stores' January special sales, in what was looked forward to as a final round-up.

Demand for the branded lines of a number of the less pretentious mills was well sustained so long as there was retail store buying for the holiday shopping period, and quite a few of mills in this class maintained day and night work schedules, while, it was stated, they accumulated no stock. Some of the mills distributing generally, employing no brands, also have been well engaged with orders, for a month or more. The numbers of mills in continuous operation while so many small concerns were idle made it appear problematical whether January would witness the almost universal shutdown that was predicted by some factors and hoped for by many.

In spite of numbers of busy plants operating through December at near top speed, there was severe curtailment, raising the question whether surplus stocks of hosiery at the start of 1931 would be as heavy as had been feared. At the end of the third quarter on of 1929 there were 3,299,932 dozens of full-fashioned and 1,361,430 dozens of silk seamless-knit in stock in mills reporting to the Department of Commerce. These holdings compare with 3,587,613 dozens of full-fashioned and 917,346 dozens of seamless-knit in stock in reporting mills at the end of the third quarter of 1930. At that time there were reported on the books of reporting mills unfilled orders for 1,934,-129 dozens of full-fashioned and 697,463 dozens of silk seamless, comparing with 799,805 dozens of full-fashioned and 258,610 dozens of seamless at the end of the third quarter of 1930.

While from this standpoint of stocks in mills with the commencement of the last quarter of 1930 the showing might appear as not encouraging the view of a stock cleanup by the end of 1930, it will be recalled that during the first quarter of 1930 buying for jobbers and retailers was in large measure suspended. Dealers then had stocks. They may be presumed to have none of moment in January, 1931. It would seem, therefore, that if the year-end inventories were as low as commonly believed, the outlook for the first quarter of 1931 is better than was the actual condition in the corresponding period of 1930.

DURENE

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AND COLORED

YARNS

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323 So. Franklin St.
CHICAGO, ILL.

James Building
CHATTANOOGA, TENN.

52 Chauncy St.
BOSTON, MASS.

HAMILTON, CANADA

LOS ANGELES

Mills

CHESTER, PA. **BELMONT, N. C.**

ABERFOYLE MANUFACTURING COMPANY

REPRESENTATIVES IN ALL THE PRINCIPAL COUNTRIES OF THE WORLD

Full-Fashioned Rayon for 50 Cents a Pair.

While a price of $4.50 a dozen does not necessarily mean a retail price of 50 cents a pair, it is pointed out by a manufacturer's representative, he has taken orders for a rayon full-fashioned number which is designed to sell for a half dollar in good stores. The stocking as described to the trade is of dull-luster rayon to top, 42-gauge, rayon plaited foot and narrow French heel. At $4.50 a dozen, it was believed, retailers insisting upon a full-fashioned number to sell for a half dollar would give it a hearty reception. It is understood to be the idea of the manufacturer, by putting out a 50-cent full-fashioned, to make it more difficult to exploit popular price seamless—in other words, another drive into the camp of the circular knit group for minimizing the effect of its competition with dollar full-fashioned goods. Women's delustered rayon stockings of seamless construction were on sale quite recently for 39 cents a pair, and as this was presumed to be a markdown price, it would appear that a half-dollar full-fashioned rayon might effect a revolution in the prices of seamless rayons, admittedly the better item to date for meeting the lowering values of full-fashioned silk.

Aim to Stabilize Cost and Price.

What promised a very few weeks ago to eventuate in a hosiery trade sensation of national interest was the reported maneuvering of a small group of important full-fashioned manufacturers for a price stabilization campaign. The storm center of the movement is in Philadelphia, where several meetings were held, ostensibly to avert further unemployment of knitters and operatives in other departments of the full-fashioned industry. Attending the meeting were, mainly, less than a score of mill men aiming at downward revisions in piece work wage rates. But these mill men wanted some sort of assurance that a reduction, if any, in their plants would not be followed by similar changes in others which already had an advantage in wage schedules. In the meantime there were joint conferences which resulted in a proposal of a reduction of 12½ per cent in the cost of what are termed wareroom operations from boarding to boxing. This was dropped pending further conferences, which it was believed would result in a report finally early in January. The play toward price uniformity and no further disturbance of wage schedules is between rival interests representing a division of sentiment among factions of an important group of mill executives.

Some of the manufacturers constituting the faction taking the initiative toward stabilization and a better understanding among mill executives expressed themselves as strongly favoring a conference of representatives of the entire hosiery industry, and to this end Joseph Haines, Jr., of the Haines Hosiery Mills, Philadelphia, who is executive secretary of the Full-Fashioned Hosiery Manufacturers of America, suggested in a recent letter to Secretary of Commerce R. P. Lamont that such a conference be had under his official auspices. Subsequently B. W. Heyman, the Heyman Mill Agents Company, Philadelphia, wrote Secretary Lamont inviting a study of a proposal for selling all hosiery irregulars through some central agency under competent supervision, such irregulars to be offered to only such retailers displaying a license to market irregulars.

Mr. Heyman has held that misrepresentation of irregulars as first grade stockings is the cause of much of the confusion over prices. This has been a complaint of the Association of Ingrain Hosiery manufacturers, and it is announced that, beginning shortly after January 1st, what is virtually the plan outlined by Mr. Heyman will become effective among the members of the ingrain association, details to be determined. The irregulars of all members are to be distinguished by a stamp.

It is observed in the trade that not since the palmiest days of the full-fashioned hosiery industry have manufacturers been so engrossed with the importance of constructive efforts. Especially is there heard much approval of the plan announced in December by Dr. George W. Taylor of the Research Department of the University of Pennsylvania for a complete survey of the stocks of full-fashioned hosiery in mills and unfilled orders of as of January 1st.

An Analytical Hosiery Stock Survey.

Dr. Taylor stated in an interview for COTTON that he purposed showing not only the quantities of hosiery finished and in the gray, in stocks of mills, but that the hold-over goods would be classified by gauge, and it was thought likely he would submit such an analysis of the survey as would indicate the precise types of stockings, notably chiffons and service weights, representing the unsold. It was deemed probable stocks might also be classified by the number of strands of silk used in varying forms of construction. Whether there would be a segregation of dull silk and tram silk numbers was not fully determined at the time of the interview with Dr. Taylor, who then was preparing questionnaires in line with suggestions of manufacturers. In any event, it is Dr. Taylor's intention, with the co-operation of manufacturers, to present the most vivid picture yet drawn of what is generally conceded to be the chief ailment of the full-fashioned industry. It is understood this will be the beginning of periodical surveys of like ramifications, and it is unofficially stated the University Research Department and the National Association of Hosiery and Underwear Manufacturers will collaboratae in the work.

There are heard incidental suggestions that the drift in the use of rayon for women's seamless hosiery be made the subject of a separate study. The report of the Department of Commerce for September, it was pointed out by an interested manufacturer, showed that for the mills submitting statements there was a decline of 72 per cent in production of pure thread silk, 33 per cent in rayon, 86 per cent in rayon in combination with silk, a 70 per cent drop in rayon in combination with cotton, and a falling off of 49 per cent in production of all classes of seamless construction, making comparisons with September, 1929. While there were decreases of net shipments, orders booked and unfilled orders, these declines were compensated for in a drop of 27 per cent in stocks in the mills finished and in the gray, at the end of the month.

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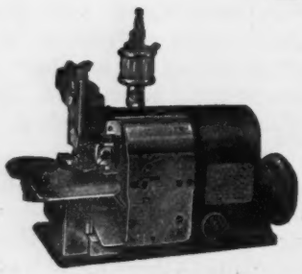
HIGH SPEED TRIMMING AND OVERSEAMING, OVEREDGING AND SHELL STITCH MACHINES FOR USE ON KNITTED AND WOVEN FABRICS OF ALL KINDS

—— 200 VARIETIES FOR 200 PURPOSES ——



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INQUIRE ABOUT NEW MERROW MACHINES

STYLES 60-ABB and 60-D3B

For simultaneously trimming and joining ends of cotton, silk or woolen piece goods with a

FLAT BUTTED SEAM

Permits goods to pass through finishing machines, uninterrupted, for such operations as Shearing, Calendering, Mercerizing, Bleaching, Dyeing and Printing—with *remarkable saving*—both in labor and fabric.

Butted Seam, natural size, made by STYLE 60 ABB MACHINE on Cotton Goods which have been subsequently processed. The STYLE 60 D3B makes a similar though much wider seam designed for use on sleazy or loosely woven goods to insure holding.

OTHER RECENT DEVELOPMENTS—FOR THE RAYON TRADE

STYLE 60 RD —For a three-thread overedge finish, either straight or scalloped, on Rayon Bedspreads and other sleazy articles on which the ordinary edge finish will not hold.

STYLE 60 JDC—For two-thread **FLAT SEAMING** on Rayon Underwear.

Let Us Demonstrate the Work of These and Other Machines on Your Own Fabric.

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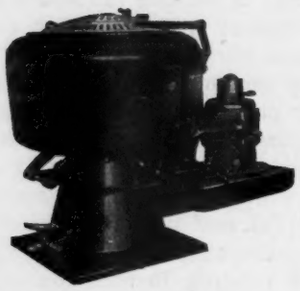
G. W. MORTON, Southern Representative
1903 Friendly Road, Greensboro, N. C.



It makes the *little lots* profitable

FOR a long, long time, the "American Underdriven Extractor" has had a reputation for big profit handling of small batches. Rugged, accurate, perfectly balanced—its high speed and big capacity make it ideal for silk and rayon work. Baskets—20", 24", 26", 28", 30"—all with side sheets of monel metal. Investigate.

The American Laundry Machinery Co.

Specialty Dept. C

CINCINNATI, OHIO

With values of all else in women's hosiery crumbling before the onrushing wave of low price full-fashioned, Bemberg numbers necessarily showed only weak resistance, demand falling away until numbers of stores were making markdowns that often ignored cost, the first object being to sell all. It develops, however, that some of the department stores carried former Bemberg-to-top dollar numbers over for their January special sales. At 59 to 69 cents, distribution to consumer was large in the aggregate, according to department managers—Bemberg at such prices proving acceptable to thousands of shoppers as a substitute for service weight silks, which, with cotton top, were competing at 78 cents in a few leading stores. A German-made stocking, of German Bemberg yarn, representing the aristocracy of hosiery of this fiber, which had been bought early in 1930 as a $2.50 a pair item, seems not interesting at half that price. "Low prices for silks have, temporarily, at least, halted sales of the better grades of Bemberg," say hosiery department managers.

See Steady Drift to Dull Silk.

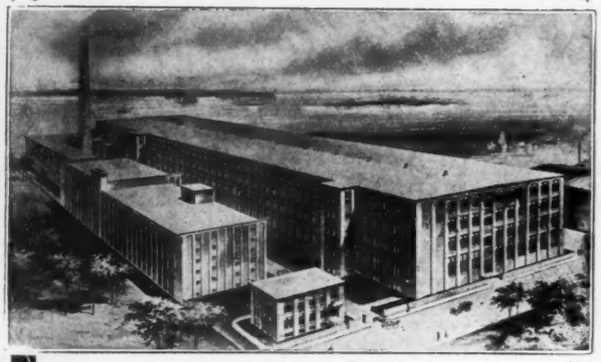
After several months of efficient sales promotion propaganda, dull silk hose has necessarily made quite a showing in distribution. But, as production of dull silk numbers has not materially served to maintain prices, the one thing in particular that was aimed at when first it came on the market thus failing in the main objective of many mills which were quick to put it in their lines, it is questioned whether the special sales promotion plans will be continued.

Tram silk, with the sheen that was regarded its saving characteristic, has not been specially pushed as such since the appearance of grenadine and imitations. Leading hosiers say mills undoubtedly will have to keep on making bright silk stockings, especially of medium service weight and heavier, but that the drift is more and more to dull silk.

Reported Cut in Underwear Prices Passed Almost Unnoticed by Buyers

REPORT which made its appearance in the underwear primary markets late in December that a New York manufacturer had reduced the price of 12-pound cotton ribbed suits to $6.37½ a dozen; 14-pound to $6.87½; 16-pound suits to $7.50 and 10-pound shirts and drawers to $4.25, caused not the slightest commotion among either sellers or buyers. In the first place, these prices were not new to some buyers, and latterly were not regarded sensationally low. Then, too, had a report of prices still lower by a half-dollar a dozen been named in whispers, they would have supplied no buying stimulus. For, as had developed, retailers and jobbers were a unit in aiming to sell the last garment of a given size or number and buying none while one remained. Retailer purchases of heavy weight underwear during December were governed by temperatures. As usual, jobbers are carrying a reserve of a case or two for an emergency in January, and it was figured that should winter temperatures prevail beginning with January, total sales of men's and boys' 1930 heavy-weights would fall not far behind those of recent years.

Quissett Mill
New Bedford, Mass.



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SIGNIFY TO THE BUYER AND SELLER ALIKE . . . THE PRESTIGE OF PERFECTION

The reputation of the manufacturer of a product should be weighed as carefully as the advantages of the product itself.

The name Quissett . . . backed by the experience of nearly a quarter century of pioneering in yarn production . . . is an unwritten guarantee of the finest in materials, strength and uniformity.

Modern yarns . . . produced by 80,000 spindles . . . are up to the minute in every detail . . . quality yarns which make textile selling easier . . . yarns which reflect prestige wherever used.

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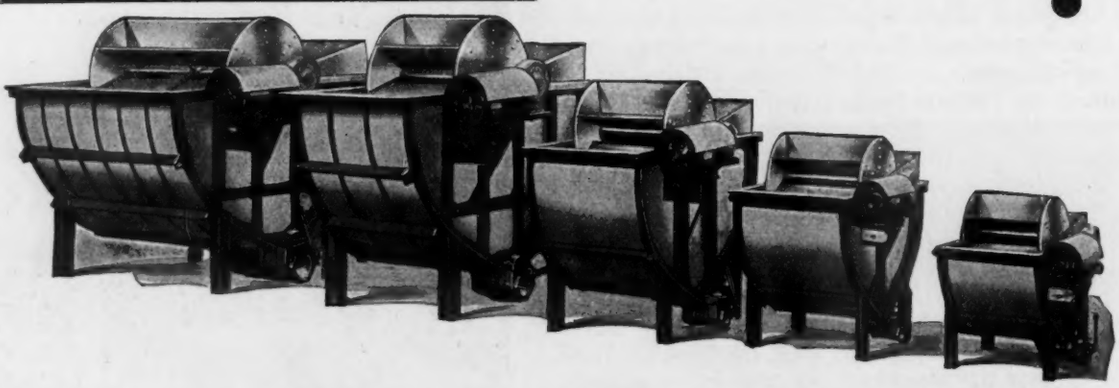

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Hosiery dyers will welcome the corrosion resisting cast iron frames, mono-cast side frames and cast iron angle end frames.

These frames are made extra heavy and rigid to reduce vibration. Motor, belt or chain drive at your option. Capacities 5, 10, 25, 50 and 100 lb. sizes. Other sizes built to order.

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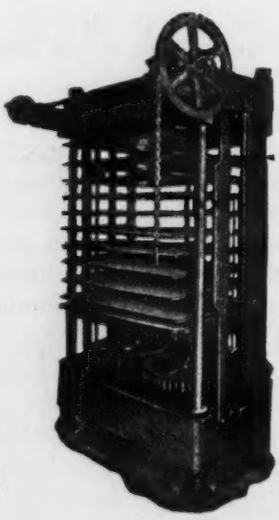

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Hot Plate Screw Press
FOR
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Reliance Machine Works
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Sewing Operations

are done better, faster and cheaper on Union Specials.

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OIL STENCIL PAPERS

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101 BEEKMAN ST., NEW YORK

Men's light weight underwear has been hardly a trade topic, with cotton making recessions during December as though heading for the 1930 bottom values at the end of the year. Sales of running pants and athletic shirts have held at a fair stage since the beginning of the fall season, coming to be regarded more and more a year round item. Nainsook athletic union suits are reported registering the usual volume of sales, doing better in the better grades than even their more ardent supporters had hoped for in view of the popularity of the combination of shorts and athletic shirts embraced in the trade classification underwear.

According to authoritative sources, rayon underwear for men has seen the peak of its popularity. It is in fair call in the better grades, but the wilfully cheapened is said to have few friends among buyers for the trade. Womens' rayons continue to make it more difficult to sell cotton underwear, although several of the more important manufacturers whose cotton numbers are in good repute say they note no material decline in sales to regular customers, while adding few new ones.

Outlook for Knitted Outerwear This Year Better than Conditions Prevailing in 1930

THE 1930 SWEATER seasons got a late start and registered an early finish. Intending to show samples of their spring lines in January, numbers of manufacturers who early in December had, apparently, received their last order for the year, were on the road in the first week of the month with their new creations. They report a satisfactory reception but a famine as to orders.

According to mill and jobber reports generally, sweater distribution suffered a setback in 1930, and the present outlook is for delay in getting spring orders until after a few weeks of see-sawing in the primary markets, during which opening prices are liable to be revised. Last year was a better year for mills making low price lines for men and boys than for those maintaining former high standards, despite price competition. Of two mills producing known high-grade sweaters, one was petitioned into a receivership in December and one discontinued business, the plant being sold to a the Thermo Company, Hudson, New York, which is removing the machinery to that place from Philadelphia. The Knock-about brand, business and equipment of Grushlaw & Sichel was bought by the A. Thermo company. Of two other Philadelphia sweater mills, one was at last accounts still in the hands of a creditor's committee pending disposition of a proposal to settle for 40 per cent of the amount of the claims. This company also had a reputation for standard merchandise. A fourth was sold at a receiver's sale.

Bathing suit manufacturers are about to begin their manufacturing season, and that some are putting orders in process is indicated in giving spinners shipping instructions for worsted yarns. There is a promise of a better year than 1930 for both sweaters and bathing suits. Buyers at the beginning of their contracting season will have an advantage in the lowest cost of worsted yarns in some years.

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HARD MAPLE HOSIERY BOARDS

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

Our special finish is highly recommended for silk and wooden boards.

We serve the best mills—send a request for list and same will be forthcoming.

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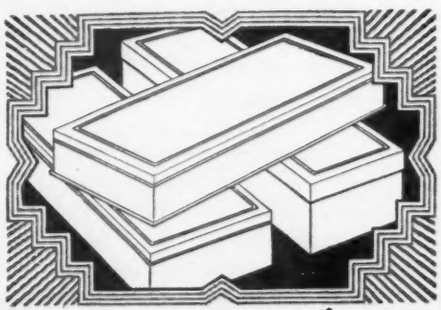

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Lynchburg, Va.

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quality OLD DOMINION Paper Boxes

The YARN MARKET

Philadelphia, Pa., December 13, 1930.

THE REPORT of last month was of the most optimistic tone. It will be remembered that for the first three weeks of the last report period active sales recorded were considerably above what they had been during the past few months. Yarn rates were also more stable than they had been for quite awhile. As so many feared though, the upward trend was mainly due to fall buying. As soon as fall business had been placed, the market settled back into the same period of unrest that it has experienced now for sometime.

Sales during the first week of the present report period were of an unusually spotty nature. Some were inclined to believe that sales throughout the remainder of 1930 would be on a very small scale. It was pointed out that the large majority of yarn consumers would endeavor to keep their stocks just as low as possible for inventory, and that this would be felt by distributors during the remainder of the year.

Many predicted that a noticeable improvement would take place after the first of the year. It was believed that sales and shipments not only of yarns but of cotton products and merchandise in general should be stimulated through the necessity of replacements all along the line to the retailers' shelves. The approach of the new year and better business was being looked forward to with a great amount of anxiety, but the danger of just sitting back and waiting for it to roll around was pointed out by many competent yarn men.

During the next week prices of cotton yarns eased off considerably. Taking into consideration the expected effect of the Thanksgiving holiday, cotton yarns were a disappointment to spinners and sellers during the week. Few had thought that prices would, regardless of fluctuations of cotton quotations, decline as was the case with cotton yarns during the week.

It was conceded that one of the big reasons for the declining prices of yarn was due to the fact that yarn salesmen, in an effort to put through sales and protect their jobs, would ask buyers for a bid whenever price resistance was encountered. Of course news of the bids eventually leaked out, which tended to have a very unstabilizing effect upon the market.

There were very few who felt that the early part of 1931 business would be done on a price range more satisfactory than prevailed at the present time. Ordinary quality carded weaving and knitting yarns at this time were approximately 30 per cent below the prices effective at this time last year, while single combed yarns were 27 per cent lower and two-ply combed yarns were 17 per cent lower. The prices that have existed throughout the year have, of course, been very unsatisfactory to producers and distributors.

Reports that were issued at this time to the effect that the automobile business was showing signs of improvement caused some to feel the demand for yarns entering into the making of plush and other materials used by the motor companies may take a decided increase in the near future.

Yarn rates varied very little during the next week, the week of December 8th. Most yarn distributors and spinners expressed themselves as being anxious to hold carded and combed yarn rates as steady as possible during the rest of the month, as prices were already very low in relation to cotton costs, and buying would not increase even if further price concessions were to be granted. They did not expect much improvement during the remainder of the month, but stated they were counting heavily on benefits in January if cotton and yarn values could be stabilized in December. Many distributors and spinners said they did not look for any real opoprtunity for profits until next April or May.

Philadelphia's prices on December 13th follow:

Single Skeins.

4s to 8s	18½	10s	19
12s	19½	14s	20
16s	20½	20s	21
24s	23½	26s	24½
30s	25½		

Single Warps

10s	19½	12s	20
14s	20½	16s	21
20s	21 @21½	26s	24½ @25
30s	25½ @26		

Two-Ply Skeins.

8s	19	10s	19½
12s	20	14s	20½
16s	21	20s	21 @21½
24s	23½ @24	26s	25
30s	26	40s	34

Two-Ply Warps.

10s	20½	12s	20½ @21
14s	21	16s	21 @21½
20s	21½	24s	24½
26s	25½	30s	26½
40s	37		

Frame Spun Carded Yarn on Cones.

8s	18½ @19	10s	19 @19½
12s	19½ @20	14s	20 @20½
16s	20½ @21	18s	21 @21½
20s	21½ @22	22s	22 @22½
24s	23½ @24	26s	24½ @25
30s	25½ @26	40s	34
30s dbl. carded	29 @29½	30s tying in	24½ @25

Mercerized Yarns.

Single		Two-Ply	
30s	65	20s	51
36s	67	26s	52½
40s	70	30s	54
45s	73	36s	57
50s	76	40s	60
60s	85	50s	64
70s	1.00	60s	72
80s	1.12	70s	84
90s	1.50	80s	96
100s	1.80	90s	1.31
		100s	1.61

Mule Spun.

Carded Yarn on Cones

10s	25
12s	25½
14s	26
16s	26½
18s	27
20s	27½
24s	30
26s	31
30s	32
40s	39½

Combed Peeler Yarn on Cones

10s	34
12s	35
14s	36
16s	37
18s	38
20s	40
22s	41
26s	42
28s	43
30s	44